JUL 12 1919

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Vol. XV APRIL, 1919 No. 4

SHANGHAI, PEKING, TOKYO AND MANILA

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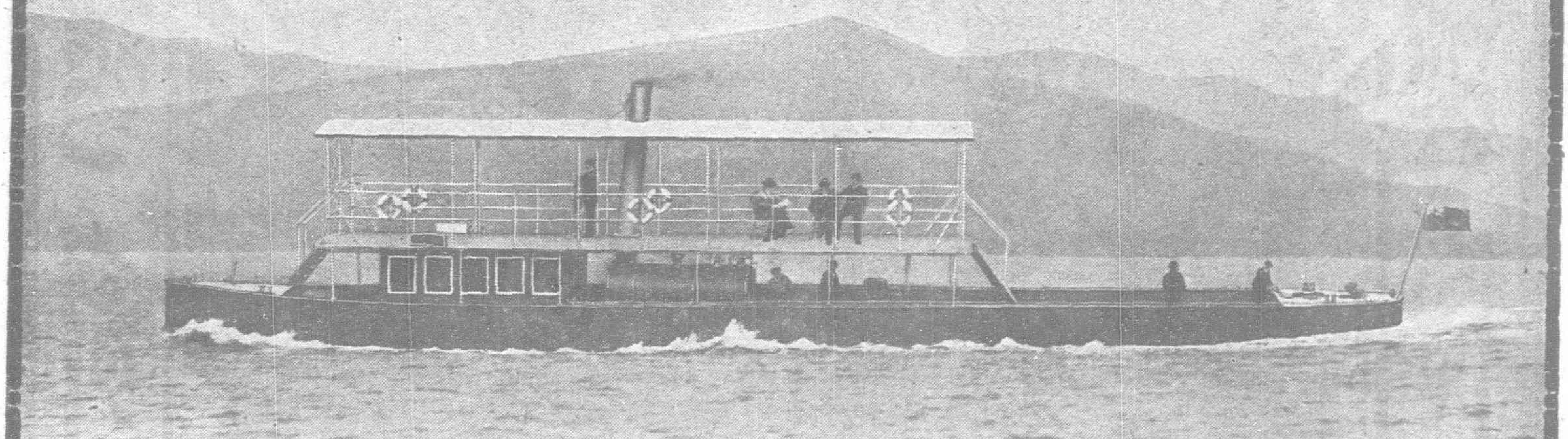

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The Far Eastern Review

ENGINEERING FINANCE COMMERCE

VOL. XV SHANGHAI, APRIL, 1919 No. 4

Unification of Chinese Railways

How the Political or Commercial Sphere of Influence may be Eliminated

Ever since mid-July last when Foch's counterblows began to roll back the German forces, it has been perfectly apparent to whomsoever would look that the Chinese railway situation was in for a review. The review is on. It has been unofficially proposed to associate all foreign interests represented in Chinese railways into one group, so that the Chinese Government may deal with it as a unit. The proposition has been given several names, "neutralization," "nationalization," "internationalization," "consolidation," "commercialization," "unification" and what not. The effort of its proponents has been to give it a term which would show the union of the various foreign interests and yet show that they were to be divested of all political significance. Opponents have done their best to use terms which would carry the impression that the foreign governments intend to confiscate and exercise sovereign control over Chinese Government railways. A poet can afford to ask "What's in a name?" But a politician knows better. A brief review of the nature and extent of the foreign interest in Chinese railways will assist in coming to a conclusion. Here and there a short railway has been built by a private company to connect its mine with a river or some other railway. Certain Provinces during a period of enthusiasm built short stretches of line, which, for the most part, either begin or end nowhere. Out of the profits of the Peking-Mukden railway the line from Peking to Suiyuan was built by Chinese forces. Upon these lines it may be said that there is no foreign investment interest.

Next come the principal Chinese Government railways, which have been built almost entirely out of funds borrowed abroad. The Peking-Mukden was first conceived as a mine facility, then developed into a Chinese stock concern, but has arrived as a line with two foreign mortgages upon it, one of which prescribes that until the mortgage is paid off, it shall employ certain designated foreign officers. The Peking-Hankow railway which was built under a contract providing for a very considerable foreign personel as officers, is still mortgaged, but the original mortgage was refunded by means of another which placed employment of foreign personel entirely at the discretion of the Chinese government so long as interest payments are met. Then follow a few lines like the Tientsin-Pukow and the Hupeh-Hunan, upon which, although all the funds for construction were borrowed from abroad, the mortgagee has reserved no right to appoint or control officials beyond a Chief Engineer. In contrast to these are the railway from Chengting to Taiyuan, the line from Hsuchowfu westwards to Kuangtung in Honan province, and under construction to Sianfu and beyond (known as the Lung-Hai railway), and the Shanghai-Nanking, upon which the foreign bondholder has a right to name all the higher operating officials and these in turn have the right to discharge any and all minor officials In other words the control of operations upon such lines is almost entirely in the hands of foreigners.

So far as control over operations is concerned, there is not much to choose between these last named and the purely foreign-owned lines. However, the profits and losses of such lines accrue to the Chinese Government, whereas those of the Chinese Eastern (in North Manchuria) the South Manchuria, the Shantung and the Yunnan lines are the sole concern of their foreign owners. Then, too, on the South Manchuria and Shantung railways only menial positions are given to Chinese, in contrast with the Shanghai-Nanking upon which Chinese hold all the higher positions except a half-dozen or so of a technical or fiduciary nature.

Apart from these differences as to control of personel, the loans upon all the government lines are remarkably alike in reserving to the bondholding sydicate the privilege of making all the purchases of foreign materials, upon which it receives a commission. A further privilege, which is considered even more valuable, is that upon equal terms it may give preference to its own nationality in the purchase of such materials. Now "equal terms" is a rather elastic term, especially when the syndicate representative has the making of specifications. So the invariable result has been that the nationality of the line enjoyed a practical monopoly of the supply trade of that particular route. The further result is that upon each line there is a distinct national type of equipment, machinery and practice. Since there are British, French, Japanese and German mortgages upon the Chinese Government lines, that number of types is in use. This serves very effectually to emphasize the individuality of any line. It is a further fact that shop machinery designed to meet the needs of repairing equipment of one type, is not efficient in the repair of a different type. Furthermore, workmen familiar with one type are not "at home" when working on a different type. The result is that repairs are not made well and that the natural prejudice of employés against the "foreign" article is substantiated by its poor performance when improperly repaired. Out of this has grown a very definite opposition on the part of operating officials of the various lines to permit their wagons to move off the line, let alone enter any "common user" pool.

Less than a year ago the Ministry of Communications attempted to get the permission of all the principal lines for the creation of a wagon pool, so that wagons under load could move on to their destination without transfer of their cargo. While the Traffic Conference voted in favor of a modified pool, the Traffic Managers, when the subject was referred to them, absolutely refused to have anything to do with it. And, so long as these loan contracts are in existence, the Ministry of Communications will be powerless to effect this much needed reform.

Shortly after the birth of the Republic, steps were taken to amalgamate the various individual lines into a government *System.* Very properly, the first step undertaken was that of unifying the classifications of accounts, so that it might be possible to exercise some degree of supervision over the construction and the operation of the lines, even though the actual work were under the direction of the foreign syndicate and its appointee. Dr. C. C. Wang, who was in actual charge of that work, fully realized the difficulties ahead, and appreciated that the success of the project depended upon its persuasive power rather than upon the right or the power of the Chinese Government, under the agreements which it had made, to force any changes of the sort. Very wisely, he engaged expert neutral assistance from abroad, and with the help of Prof. Henry C. Adams, who had just completed a like task in connection with the seven hundred railways of America, he secured the consent of all the foreign Chief Accountants to standardize classifications of Capital, Revenue, Expense, and Financial accounts.

Acting upon the same principle, the Ministry of Communications has caused to be formed a Railway Technics Commission, which is charged with the duty of drawing up uniform standards for the equipment and physical property of the various lines. So far this Commission has consulted the individual lines only informally, and in a personal way. The training and skill of the individuals composing the Commission are not disputed. Possibly they may be able to devise designs and specifications which may be real compromises between English, French and other types now in use on the government railways. But they have no power whatever to compel at least half of the lines to accept these standards. No matter how skilfully the compromise has been worked out, the compromise type will differ enough from a given national type to make it more difficult and more expensive to manufacture. Under the intense competition of post-bellum reconstruction the home manufacturers will insist that they be treated as favorably as possible. The pressure which they can bring to bear upon the technical officers of the lines in China through the respective syndicates will leave the officers now in charge of those lines no option but to refuse to accept the Ministry standards and adhere to the old national standards. The Chinese Government is absolutely helpless in this matter, so long as the old agreements stand.

Manufacturers are not to be blamed altogether for this attitude. At present no line ever orders more than ten locomotives, or a hundred goods wagons, say, at any one time. An order of those dimensions will not justify any manufacturer in deviating from his ordinary standards. The Ministry of Communications may draw up uniform specifications and uniform designs until its filing cases are full, but it will still be as far away from uniformity in the actual material which is purchased as it is now. For the present purchasing agents are not compelled to buy according to any specifications but their own, and, if they wished to do so, they could not get the new designs in the market, which, under financial obligations, they are bound to patronize.

There is a program of new construction, which, if it goes ahead under the old terms, will perpetuate the bewildering confusion for an indefinite additional period If a change is ever to be made in these conditions, this is the time. Change is in the air. There is a willingness on the part of certain nationalities to make concessions to the general good.

If the Chinese market for equipment could be broadened by a real program of construction, there is hope that the objections of individual syndicates to a standardization of equipment could be removed. If the four thousand miles of Government lines could be increased within the next twenty years to twenty thousand miles, the larger orders for materials would make it worth while for a manufacturer to try to meet the Chinese specifications rather than to insist upon his own. Wherever the question has been asked, the invariable answer has been that a competitive market on twenty thousand miles with a Chinese standard specified would be worth more than a monopoly market upon two thousand miles (which is the most any nationality now has) with the home standard specified. Hence if there is ever to be interchange of rolling stock on a large scale, through shipments of goods, and the other features which will make of the Chinese railways a real system, some form of co-operation must be worked out so as to induce future construction on a large scale and the giving up of monopoly privileges on several of the present lines.

Unfortunately, the outlook for future construction is not bright. The political situation both internal and external is too unstable. Internally, the Chinese Government is unable to enforce any of its decisions or to give protection to surveying parties, operating lines, or operating officials. The Managing Director of one government line, who endeavored to exercise his authority, was summarily ejected from the train by soldiers, partially disrobed, and subjected to a most undignified beating. He fled and has not returned to his post. The soldiery rides first class in space which civilians have paid for. Goods wagons are appropriated for living quarters by the rank and file and for the carriage of private goods by higher officers. Under such conditions no banking group will lend money to build railways in China unless at the same time it can garrison the line with soldiers of its own nationality. The only building in China during the past three years has been on that basis

Externally, the financial situation is bad. The world war has left a great task of reconstruction. All continental Europe will be engaged upon that for years. Russia and Siberia now appear in the world market seeking funds, and the capacity of the vast area which they represent to absorb profitable investment is only dimly appreciated. Mexico has suddenly realized that she must have assistance for development. The South American nations are conducting a propaganda in the hope of diverting capital to their development. In all of these countries the terms offered put few limits upon the possible profits. The principle underlying their offers is that the country profits from the introduction of the new enterprise, and that therefore the enterprise may be free to take all the profit that "the traffic will bear." In most of these countries conditions are becoming stable. While many are depressed over the Russian situation, there is every hope that another season will see quiet restored. The Russians are capable of organization. All of this puts so much competition in China's path towards funds, that on the pure investment basis she will have to wait her turn.

Besides, where can anyone build in China? French and British agreements as to routes conflict in Kiangsu British and Japanese agreements conflict in Fukien. American and French agreements conflict in Kwangsi. British and American agreements conflict as to routes to Szechuan. American and Russian agreements conflict as to extensions of the Peking-Mukden line. An American agreement conflicts with Japanese

CYCLIST POSTMEN OUTSIDE CHINESE POST OFFICE, SHANGHAI

The C.P.O. has 300 Postmen in Shanghai, 160 of these being mounted on cycles, and the number of articles delivered daily often exceeds 100,000. The C.P.O. in Shanghai has 22 Sub-Offices and 160 Pillar-Boxes, and employes over 1,000 men in this city alone.

and Russian agreements in Manchuria. What chance is there for any systematic construction under a condition like that?

During the past twenty years only six thousand miles of railway have been built in China. Why? Not from lack of room, not from lack of money; but because every national interest was blocking every other national interest. During the past ten years a bare thousand miles of line have been built. Under any ordinary conditions, a thousand miles would have been built every one of those ten years. No, the prospect for new construction, for a broader market, for merging the government lines into a national system is not bright.

But there is a political phase to the subject that is perhaps more alarming than the economic. China has always looked upon these railway lines built by foreign loans as a possible source of danger. Indeed, many of them have been built so as to give the builder color of contol over the territory served in case China finally disintegrates. One nation which has acquired railway interests in China actually garrisons with her own troops the lines which she controls. To add branch lines and connections to the lines already built would by so much extend and solidify the authority of the foreign power concerned within Chinese territory. Whatever fiction may be set up in the agreement with respect to the line being a government line, the property of and subject to the jurisdiction of the Chinese Government, if foreign troops are actually statoned at all the strategic points such as Tsinan, Mukden, Hankow and the like, the fact is that China has lost control. A desperate, tottering, money-mad ministry may be willing for a price to extend and continue such a condition, but the Chinese people are not.

A considerable foreign element not only fully sympathizes with the Chinese people in this attitude, but also itself views the situation with considerable anxiety. There is no use blinking our eyes to the fact that Japan is determined to have a prominent position upon the Asia mainland. She is not satisfied with Korea. She must have a wider field At home her people are restive for food. Food cannot be bought without a market for Japanese goods. That market should be found in China, but at present is of small proportions due to the low purchasing power of the Chinese people. Besides, there is no plentitude of Japanese goods, because Japan is very short of iron and other raw materials. Those also should be obtainable from China, but at present are not. Hence Japan has fully made up her mind to go over and get them. She is about it. This program of aggression comes so squarely in conflict with the constructive program of other nationalities that the consequences appear to be very serious.

That Great Britain will maintain her own positions goes without saying. She has a fairly consistent record on that point. But France, while still a world power, will be so engrossed with her domestic problems of reconstruction that she will probably not care to take an aggressive part in China affairs. Her financial representatives are known to be in the United States seeking financial alliances which will permit her to complete her program in China. The very evident community of interests of the British and the Americans in the Peace Conference at Versailles has its counterpart in the close association of Americans and British in China. Anglo-American Associations are being fostered very successfully, and there is every reason for predicting that combinations can be effected in the few instances where British and American routes collide. The evident alignment, then, is a more or less formal alliance between British, French and American interests as opposed to Japanese.

Hitherto, it has always been expected that when any program in China came in conflict with an American proposition, the Americans would more or less gracefully yield. This happened in the Peking-Hankow case, the Tienstin-Pukow, the Canton-Hankow, and the Chinchow-Aigun agreements. America was supposed to be satisfied with the friendship of China while others would be satisfied only with some part of China. But this rating of America in Chinese affairs will have to be revised also. America is committed to the "Open Door." This policy stands as a younger sister to the Monroe Doctrine. Before joining in the Great War, America resented the invasion of Belgium, she was horror-struck at Hun atrocities, but she did not strike until Germany presumed to tell her that certain lanes in the sea her ships might travel, and certain they might not. Then she hesitated not a moment but leaped into the battle with an amazing revelation of unanimity and strength. Now, when some nation proceeds to tell America that in certain parts of China she may trade and in certain parts she may not, we may expect to see a similar demonstration of what America can do when her temper is aroused. And remember that America is now fully armed and many of her war horses are champing at the bits.

If the British-American-French combination is actually consummated, there will be little difficulty in confining the activities of Japan to the Liaotung Peninsula. The Chinchow-Aigun line which America has contracted to build will prevent Japan from penetrating further westward. By the judicious handling of rate levels, in which American railway men have had nearly a hundred years of highly competitive experience, the value of the South Manchuria line as an investment could be considerably impaired. Indeed, such a rate war would be the very logic of the situation by way of improving the earnings of the Aigun line if America insists on building it. It appears, therefore, that the whole situation is in the hands of the Americans to make or to mar. But in harmony with President Wilson's policy as expressed in the League of Nations, Americans are urging that the Japanese be admitted to the combination mentioned above and that provision be made for the representation of other nations whenever such signify a desire sufficiently to justify participation in the development of China. To this proposition, it is understood, British interests have given a hearty welcome.

But the attitude of Japan towards China has been envisaged so long in terms of armed intervention and conquest, that it has become a habit of mind with her statesmen. The German advance of last Spring convinced her leaders that a German victory was inevitable, and so the sudden turn of events left them confused and unable to revise their policy with any degree of confident decision. Hence, Japan finds herself in a position where she is likely to be challenging 90 per cent. of the sea power of the world, a position which might deprive her of four-fifths of her foreign market and almost her entire supply of iron and steel, yet she persists in her old attitude of brow-beating China for concessions which have already been promised to others.

Out of this situation the idea of international co-operation as opposed to international competition gradually welled into expression. Just where the idea started no one quite seems to know. Like Topsy it appears never to have been born,—"des growed." A chance word at the club, conversations at dinner tables, discussions of the League of Nations—all these finally have converged into a more or less definite thought with respect to China and her railways. There was earnest discussion among forward Chinese of rank and ability immediately after the signing of the armistice. For reasons, political in part, racial disinclination to be direct, and perhaps hopelessness also, these men did not make public their opinions, but let the plan appear to come from foreign sources. Several outlines have appeared, none of them quite alike, but all of them the same in principle. All of them represent foreigners' attempts to interpret the Chinese situation. None of them appear to be quite successful in doing so. Yet they may prove very useful as a basis of discussion without which all talk is bound to be aimless.

It will not be easy to satisfy both the Chinese and the foreign point of view. But there are a few general principles upon which both sides can agree, and from these it should be possible to work out something practicable.

Both foreigners and Chinese want more railroads: Chinese, in order to improve the condition of their people; foreigners, in order to increase trade.

Both foreigners and Chinese want railroads to be operated efficiently; for efficient operation means rapid growth of railroads, and better service to the immediate patron.

Both foreigners and Chinese believe that in order to get efficient operation of Chinese railroads, the security of tenure to the employé and the opportunities of promotion must be such as to encourage him to look upon railroading as a life time profession and to devote his best efforts not only to his present job but toward preparing himself for greater responsibility. Therefore, both foreigners and Chinese believe that family and political influence must be removed from the service by the establishment and enforcement of an impartial civil service plan. Naturally, certain high officials who can maintain themselves in position only by alliances, do not favor depriving themselves of this source of bestowable favors, and these men are able to make their voices heard above the crowd

Both foreigners and Chinese believe that in order to get efficient operation of Chinese railroads, the elemental principles of organization must be observed. One of the most elemental principles of organization is that each man shall know what his duties are and what they are not. In a concern where the numbers employed run into thousands, unless there is a clear definition of duties, there is a great waste of effort, friction, and considerable neglect of duty. Therefore, both foreigners and Chinese believe that on Chinese railroads there should be worked out a standard form of organization, with the duties of each position defined A second elemental principle of organization is that it must be possible to locate responsibility. Unless the means be provided for punishing incompetence and maladministration and on the other hand rewarding peculiar skill and diligence, discipline is impossible. A railroad is often compared to an army. Without discipline, there are no victories. On certain lines in the Chinese system, the foreign administrative forces always shift the blame to the Chinese personel: the Chinese put it upon the foreigners—and both are right. " No man can serve two masters " saith the Scriptures, and modern business proves this Scriptural truth over and over again. Therefore, both foreigners and Chinese believe that the dual system of administration must go. Where there is a foreign chief he must be chief; if a foreign chief is not wanted, a Chinese must be actual chief. A third elemental principle of organization is that with every responsibility placed upon an official, a corresponding opportunity must be given. If an official is responsible for the safe and expeditions movement of trains, he must be given such power over the men who actually handle the trains as to enable him to ensure movement according to his orders. If he is responsible for the correct paying in of funds from sale of tickets and goods transportation, he must have sufficient power over the men who actually handle these funds to ensure their obedience to rules formulated for that purpose. The best rules in the world are not self enforcing. Hence, the responsible official must be able to do more than scold, more than report improper conduct. Saying, " Naughty, naughty" never stopped a station master from squeezing. The responsible official must be able to remove such a delinquent station master and be able to appoint in his stead someone whom he knows or thinks he knows to be competent and honest. Hence, both foreigners and Chinese are in favor of a duly authorized system of departmental responsibility, giving each chief the power of hiring and discharging his subordinates; due safeguards being provided against abuse, and certain rules regarding test of the fitness of candidates being prescribed.

A clear understanding of these principles is fundamental to all arrangements for future co-operation of foreigners and Chinese. If we follow them out to their logical conclusion, we shall arrive at considerable of a change in the organization of the present Chinese lines.

It is admitted by all unbiased observers, that there is now quite a considerable body of experienced Chinese upon the several lines. There is also a growing body of men with all the technical education necessary for the more responsible positions, but whose experience is not wide, and whose capacity for organization and leadership has not been tested sufficiently to make them a safe risk. The older Chinese group find themselves balked of their highest ambitions by the presence of foreign technical experts. The younger Chinese group needs the tutelage in discipline and organization which only the foreigner can give. It has always been one of the terms of foreign loans for railway construction in China, that the higher supervisory officers shall be foreigners as long as the loan lasts. The result is that as long as there is a dollar of loan money on the line, the foreigner stays. It has been proposed therefore that if the entire system of railways is brought into the co-operative scheme, as fast as the Chinese investment grows, the length of line over which Chinese General Managers may be appointed will be extended. For example, take the Shanghai-Nanking and the Kaifeng-Honan lines. Up to the last year of the loan upon each of those lines, each will have its full complement of foreign officers, but under the combination plan, when half of the Kaifeng-Honan loan and half of the Shanghai-Nanking loan is paid off, one or other of these lines can be placed under the exclusive command of a Chinese general manager, with a complete Chinese staff, from Chief Engineer to track coolies, if he so desires. There would be no objection to his employing foreign technicians, if he wished to do so. But if he did hire foreigners in any technical capacity, under the rules suggested above, the foreigner would have the same powers, no more no less, as the position carries with it upon other lines. In other words, the Adviser system is considered *passé*. If the Chinese needs an adviser, he is not fit for the job. If he is fit for the job, he does not need an adviser. It is believed that by placing Chinese in full charge with full responsibility, protecting them with definite civil service rules, giving them foreign competition on other lines, they will rise to the occasion, demonstrate their worth, and produce results as favorable to the foreign investor as if his own representative were in control. But without the standard set by the foreign official to act as a measuring stick, without the protection of civil service rules and defined responsibilities and powers, neither Chinese nor foreigners believe that Chinese officials can resist present political and family pressure.

Both foreigners and Chinese believe that efficient operation and efficient service require that all the railways in China be operated as much as possible as a unit, so that it may be possible soon to make through shipments from one end of China to another, and so that connections between important trains are made regularly and without loss of time. In order to do this, there will have to be some co-ordinating power which is sufficiently versed in large scale operations to make practical arrangements. Uniform types of equipment are as necessary for this purpose as for the purpose of economical purchase and getting rid of monopoly privileges held by each nationality. In matters of engineering practice, distribution of rolling stock, general accounting, practice audits, etc., the system aspect of the various lines becomes fully as important as the individual aspect. The highest technical skill will be required to devise and apply standards and to secure the co-ordination of all the parts of the big machine. Some of this skill is present in China, but even the most ardent of self-admiring Chinese admit that there is very little experience on the part of Chinese in these larger aspects of the organization. Hence they propose that the Ministry of Communications hire a group of technical experts to cover the field of construction and maintenance, design and repair of rolling stock, traffic, accounts, and purchase. The foreign point of view is that experts should not be advisers, but should be made responsible for these departments, subject to the control of the Ministry of Communications. They point out that Japan, when confronted with a similar situation, actually put the foreigner in charge of a specific piece of work, and held him responsible not only for its proper performance but also for training up a force of assistants who must be able within a term of years actually to take over full control; and that as a result Japan was able to dispense with all foreign assistance within a generation. It would be incorrect to infer that this view is not shared by Chinese, but very few have dared to speak of it in very positive terms.

A technical board such as this must have a chairman. There is as much need for such a co-ordinating individual on such a board as there is need on the lines for a General Manager in addition to the Maintenance Engineer, Locomotive Superintendent, Traffic Manager, and Chief Accountant. Such a chairman must be a railroad man of broad view. He would be the connecting link between the board of experts and the Minister of Communications as well as between the railway administration and the foreign bondholding interest.

There has been considerable talk as if the proposal were to put the present Government lines under foreign control. The real intention appears to have been to provide the means of putting them under more complete Chinese control. The separation of Chinese and foreign personel by lines instead of by grades and the employment of whatever foreign technical ability is required for the systemization of the various lines upon uniform standards, heads up with the Ministry of Communications as the final source of power. No Chinese will honestly maintain for a moment, however, that at the present stage of official attitude, any Minister of Communications, if left entirely to his own devices, would abide by the civil service rules, which must be promulgated as a part of the plan, or that he would refrain from giving concerns in which he or his friends are interested preferential rates and service. Although there has been prescribed a uniform classification of accounts, every Chief Accountant upon Chinese railways has received orders from time to time from the Minister of Communications to act contrary to that classification. We all know what is happening as to rates, and how wagons are being distributed to favored firms. These things are more important to the Chinese shipper than they are to the foreign investor, but no foreign investor will give up his privileges on a line like the Chengting-Taiyuan or the Shanghai-Nanking unless he has some way of preventing practices like the above from becoming general. At present each line's bondholders are represented in China by some banking firm which acts as trustee, and whose agent resides in Peking or thereabouts for the purpose of protecting his clients from just that sort of thing. Now, if the lines which these agents represent are to be merged into a general system using similar equipment, having common standards and the same rules, it is but natural that these men shall be associated so as to act as a unit whenever the rules which have been agreed upon are not observed.

In addition, they will have a large work to do in composing their own mutual differences along national lines. One of the first things which they would have to decide upon would be how to arrange for the building of the various lines—which by Japanese, which by British and which by Americans. The obvious answer is, that after a route has been decided upon by the Chinese government under advice of the expert construction engineer mentioned above, actual construction should be let to the lowest bidder. But how about operation after construction? It will be necessary as in the past to bring in some foreign help for that purpose who will be permanent for a few years at least. What nationality? Manifestly there will have to be some distribution of positions to forestall actual discrimination.

Suppose for example, that an American is made general manager of a given line; he will need as immediate subordinates men who speak English. Naturally he will prefer Americans and Englishmen. A Japanese general manager will be sure to choose Japanese. It would be a miracle indeed if these appointments sometime or other did not give rise to differences. Then, too, with a rather definite national caste to the management of a given line, it would be surprising if charges were not raised from time to time that merchants of that nationality were being favored at the expense of merchants of other nationalities. In construction matters, there are two ways of making a profit, doing the work so efficiently that a low bid still leaves a margin, or skimping the specifications so as to get the profit. It will be a marvel if unsuccessful bidders do not from time to time raise the charge that the successful bidders are making their bids lower than standard construction will warrant, and then "fixing" the inspectors so that poor work is accepted. National jealousy will have its finest opportunity at this point,—and no doubt there will be abundant justification for it unless the means are devised for preventing it. It is apparent, therefore, that the foreign financial representatives will have to be in almost constant session at Peking in order to settle such disputes as they can and to hold the Chinese administration up to its engagements. These men will need a very good knowledge of general railway affairs if they are going to be able to protect their own nationals against possible discrimination and contribute anything constructive to the general program. They will need to receive very comprehensive reports of the workings of the lines in which they are interested, and have the means of investigating the accuracy of the reports received.

It is said currently that except for a few who have expected to have unlimited foreign capital to handle in their own peculiar way, the Chinese favor this general plan for new lines and those now under some degree of foreign control, but not on lines which are under purely Chinese control. On the other hand, the Japanese are not averse to the idea, so long as it is not applied to the South Manchuria and Shantung railways. The French advocate it, so long as it is not applied to the Yunnan railway, and the British complete the list by insisting that the Shanghai-Nanking and the Taokow-Chinghua lines also be omitted. It is obvious that on that basis there is no likelihood of getting anything like a system out of the Chinese railways. Whoever heard of adopting common standards for the branch lines, while on the main lines all the rainbow varieties are continued? Just suppose that some railway man should propose that all the branch lines be made of uniform gauge while on the main lines three or four different gauges exist. Would he not be committed to a sanity commission? Yet that is what these reservations amount to. Peking-Mukden cars cannot be used in numbers over the Peking-Suiyuan line for the reason that they are not equipped with air brakes. Shanghai-Hangchow-Ningpo cars cannot be used in numbers on its only connection, the Shanghai-Nanking for the same reason. Peking-Mukden cars cannot be used on the South Manchuria line because the drawbar is several inches higher. If there is to be a Chinese system, it must be a system. Exceptions do not make it. These reserve lines are the heart of the whole plan.

The Japanese claim that their position on the South Manchuria railway is not to be compared with that of the British on the Shanghai-Nanking. Perhaps not. Possession of a watch by means of highway robbery should not be compared with possession by means of rental. But evidently that is not quite what the Japanese mean. At any rate the British have a contract on the Shanghai-Nanking which has thirty-two years yet to run. The Japanese have a contract on the South Manchuria railway which, if the original agreement prevails, may be taken up at the end of fourteen years. (Of course, no one expects that Japan will secure from anyone a recognition of the extension of this term extorted under the Twenty-one Demands). The point is, that if the plan is to be tried, it must be tried in such a way as to create confidence in the good faith of all parties. Otherwise, the old sphere of influence will stand. That situation gives no promise of any rapid development in China, without which the industry and commerce of Japan are doomed to a very hard time.

Unless some plan of this sort is worked out, it is very doubtful if foreign capital other than Japanese will be anxious for Chinese investment. At the same time there is a very definite impression abroad that Japan will not be allowed to send over her army to collect bad debts. Japan herself will, therefore, look well to her security. One can't get blood from a turnip. Chinese investments must be made productive. The success or failure of the proposal, therefore, will depend largely upon the Chinese answer to the following questions:

Do you want more railways?

Do you believe that the civil service principle should be applied to employment upon Chinese railways?

Do you want sound methods of organization to be applied to Chinese railways?

Do you want the railways in China to be welded into an efficient national *system*?

Do you want Chinese sovereignty to be confirmed over Manchuria and Shantung?

The opposition of Chinese, such as Mr. Tsao Ju-lin and Mr. Liang Shih-yi, to the scheme of nationalization as propounded by certain foreigners is based on the ground that the aim is to secure full control of the railways. This plan would in the opinion of the opponents mean confiscation, and as a counter measure they propose that all non-Government railways such as the South Manchuria Railway, the Chinese Eastern (the section of the trans-Siberian line traversing Chinese soil), the Tonkin-Yunnan, and the Kaiochow-Tsinanfu, should be nationalized, but that existing Government lines should remain as they are, their improvement and reorganization being China's own business. Already, it is claimed, plans for standardization are under consideration by the Government, and in this connexion no foreign intervention is needed. If the spheres of influence are to be abolished, say the opponents, then an appeal could be made to the League of Nations to secure for China liberty of action in the future arrangement of loans and extension of railways. At the same time, the Chinese themselves should organize a financial group, in which foreigners may be allowed to participate, to undertake the arrangement of future loans. In this connexion it is interesting to note that the Chinese lost no time in acting. Mr. Liang Shih-yi called a meeting about the middle of March at which were present Messrs Tsao Ju-lin, present Minister of Communications and President of the Bank of Communications; Lu Chung-yu, Manager of the Exchange Bank of China; Feng Keng-kwang and Chang Chia-ao, Governor and Vice-Governor respectively of the Bank of China; Lin Chang-min, Wang Chung-hwei and others, when it was decided to form a Company with a capital of $10,000,000, half of which was promised by some of those present. Mr. Tsao Ju-lin promised that the Bank of Communications would subscribe $3,000,000, Mr. Lu Chung-yu said the Exchange Bank would take $1,500,000, the Ching Chen bank promised $200,000, and the Hsing Hua Savings Bank $150,000, while the Governor of the Bank of China said he would place the matter before his Directors. Mr. Liang explained that in reality only a small capital was needed "to defray the expenses to be incurred in surveying the railway lines."

This combination has been promised the support of the President so it need not be surprising if it eventually develops into a construction company, undertaking the building of railways on a percentage on cost basis.

The Chinese Diplomatic Council originally favored unification and internationalization but eventually they modified their views, for early in March they held a meeting and passed the following resolutions:—

1.—Political railroads such as the South Manchurian, Chinese Eastern Railway, Yunnan-Annam, Tsinan-Kiaochao, Kirin-Changchun, and Moukden-Antung, are to be redeemed by the Chinese Government with funds to be loaned from a foreign financial group in future.

2.—Those railways which have been built with foreign funds, such as the Peking-Moukden, Tientsin-Pukow, Shanghai-Nanking will be permitted to remain as they are.

3.—Those railways in course of construction or to be built by foreign funds such as the Canton-Hankow railway will be built with funds from a financial group to be formed by Chinese capitalists who will invite foreign capitalists to participate.

4.—The powers of administration and transportation are to be vested entirely in the Ministry of Communications, though foreign bondholders may nominate accountants or auditors to look after their interests in the railways.

The opposition of the leading Chinese may mean that the scheme will fall through, though the discussion that ensued will undoubtedly lead to some improvement in railway management and extension.

The Prospects of Shanghai as a Manufacturing Centre

The last few years have seen a considerable development of Shanghai as an actual manufacturing centre and it is of the highest interest and importance to form a sound idea as to what this signifies and how far the process may be extended. A perusal of the Customs annual reports, under the caption of "Principal Articles Exported (not including re-exports)", gives a fairly comprehensive notion as to the nature of the products and the rate of development. Piece goods to the extent of considerably over two million pieces per annum, and flour to an amount of some three million piculs per annum, are the most noticeable items but there are many others of consequence such as bamboo brooms, cigarettes, egg products, medicines, oil, boots and shoes, silk and skins. From 1912 to 1916 some of these items increased from fifty to two hundred per cent. The Customs returns moreover do not convey any idea as to the local consumption of local products, which certainly form a not inconsiderable addition to the amounts.

Except in the matter of processes auxiliary in one way or another to shipping interests, Shanghai would not appear to be very well suited for manufacture. The conditions to a certain extent resemble those in London, which has never achieved any great fame as an industrial centre except for a few special commodities. In one sense, therefore, this development in Shanghai is rather remarkable and worthy of investigation.

It is an axiom in manufacture that the greatest economy is effected by placing the factory at a point nearest to the sources of supply of raw material and fuel so that the freight on these necessarily bulky and heavy goods will be as little as possible. When it happens that the raw material and fuel come from different localities, the best site for the factory will be determined, other things being the same, by a compromise between the transport of raw material and fuel, generally favouring the latter. In Shanghai, however, we find the fuel carried from considerable distances. Without possessing intimate knowledge of the processes of, say, cotton or silk manufacture, it is difficult to say whether the arrangement is really an economical one or not, when compared with other possible sites for factories in China. Obviously it pays at present although we believe the war prices of coal have hit some of the mills rather heavily.

The real point at issue is whether Shanghai is so located with respect to fuel supplies that it can maintain a predominance over other Chinese cities, and we must confess to some doubt on the subject. At the present stage in Shanghai's development it offers advantages of a peculiar kind to manufacturers, which probably override to some extent the difficulties of fuel supply. The protection from interference and official squeeze, the shipping facilities, plentiful labor supply and the commercial organization for concentration and distribution of goods, all have large commercial values which enter into the situation. If it should, however, happen, as we all hope, that China really becomes stabilized, and her communications and mercantile system become greatly improved, there appears a strong possibility that many of the industries which now flourish in Shanghai may find more remunerative fields nearer to the real source of all modern productive ability—the coalfields. Shanghai as a whole will not necessarily suffer by this since it would seem that it can only occur concurrently with such a general improvement in Chinese conditions as will enormously increase Shanghai's mainstay, the shipping business, but it will make things rather different.

At the risk of being tedious, we cannot too strongly emphasize the importance of the coal question to Shanghai. At the present time the local consumption is in the neighborhood of one-and-a-half million tons per annum, of which probably one half or more is used simply for heating purposes. Assuming it is only one half which is so used the remainder, if converted to power under moderately good conditions, would continuously supply over 25,000 brake horse-power. The Municipal Electricity Department, according to the last report, consumes over one hundred thousand tons of coal per annum and sells something like 8,000 horse-power continuously for power and heating. It is quite obvious that a difference of one dollar per ton in the cost of coal makes a very heavy charge on the industrial interests of Shanghai and yet the town is so placed that such differences are very likely to occur. Shanghai being almost equidistant, from the point of view of cost of transport, from the three main sources, Central China, North China and Japan, the value there of what is in some ways the most important commodity in the world is liable to undergo constant fluctuations and the industries of Shanghai are practically at the mercy of the coal transporters. This is, of course, very ancient history but is none the less true for all that.

The Chefoo-Weihsien Railway Project

The residents of Chefoo, both Chinese and foreign, are making another determined bid for the consummation of their long deferred hopes for railway connexion with the interior of the province. An agitation is now well afoot. The Chinese Chamber of Commerce at Chefoo has despatched a telegram to the Chinese delegates at the Paris Peace Conference urging the latter to have the matter placed before the Peace Conference; not purely as a railway question but as a general demand for the abrogation of the Twenty-one Demands, and the establishment in Shantung province at least of the broad principles laid down in the Open Door policy. The Chinese Chamber of Commerce claim that under existing conditions the door is not open, this contention being supported of course by the existence of the clause in the Treaty of 1915 which concedes to Japan the rights held by the Germans under the Kiaochow Convention. It is generally believed that Japan, if she is able to sustain her title to the heritage, will use her strongest influence to prevent a railway being built to a port which, if properly developed, might prove a possible rival to Tsingtao. This might not be so, but the Chefoo residents appear to be taking no chances. They have been agitating for many years for a railway, and though numerous schemes have been dangled before their eyes none has so far managed to materialise. In order that the Chinese Government shall realise that at last the people are in earnest they have sent a copy of the telegram designed for the Peace Delegates to the officials at Peking hoping that they will be moved to action or acquiescence by a definite patriotic appeal. The Japanese Government has, in a general way, allowed it to be understood that it will in no way trespass upon the rights of the Chinese nor interfere with the sovereignty of the State, and if such intimations are worth anything at all they surely mean that Japan will take no steps to interfere with the legitimate aspirations of the Chefoo people. Chefoo, as the only Chinese port in Shantung of any consequence or promise, has decided claims to consideration. It is certainly entitled to railway connexion with the interior, not only because of the port but because of the service such a railway would render the territory through which it would pass. All that is needed is the acquiescence of the Central Government to the project, the absence of opposition on the part of Japan, and—the capital. If the two former considerations are disposed of the capital will no doubt be forthcoming. The Chinese people in the region affected will gladly invest their quota, and if the Government does not see fit to push the project through as one of a national character then there are many Chinese with interests of one kind or another in Shantung who will gladly enough subscribe the requisite capital for construction. So it is distinctly up to the Government to show its hand, and, since the Chefoo people do not want Japanese money, to Japan to demonstrate her friendship.

Aerial Transport in The Far East

The fact that the Chinese Government has established an Aviation Department, and has ordered at least half a dozen Handley-Page aeroplanes to begin with indicates that the Far East will soon see aircraft being used for practical purposes, and it seems perfectly natural that this should happen. Whether developments will necessarily proceed just as the promoters hope is another matter but something certainly will happen. The end of the Great War finds the world in possession of many thousands of aeroplanes of proved ability and, what is much more valuable, almost an army of men who can fly under very difficult conditions. Commercial flight, while it will have its difficulties and dangers, will be a simple business compared with military aviation and the mere fact that the latter has been such a prodigious success is proof positive that the former is an immediate possibility.

There are, however, very distinct economic limits which make it highly improbable that aerial transport will be used for anything but first class transport, i.e., letter mail, urgent personal transport and the carriage of light but valuable cargo. The principal part of the expense is in the running, and a very simple idea of the large energy required may be obtained from the consideration that the engine has continuously to pull itself, the machine and load up an imaginary grade of between ten and fifteen per cent. (1 in. 10 to 1 in. 6). When actually ascending a further reserve of power is required. There is a limit to the size of aeroplanes determined by the fact that the weight of the structure increases more rapidly than the supporting area, but the success of the large Handley-Page machines shows that this limit is a matter of some tons.

China is in some ways peculiarly suited to aeroplane transport. Aerodromes can be established without great difficulty and the notorious lack of roads will only affect the question of ground supplies. The western part of China being wholly mountainous is not quite so satisfactory but with numerous well arranged landing places the conditions are probably not prohibitive.

Some difficulty might occur from the superstitions of the peasants in the remoter parts of the country, but it would probably not be long before they would regard the machines as simply another example of the foreign "Yao Kuai" which really wasn't of any importance after all.

One very important question, especially to the owners of the machines, would be the question of Chinese pilots. We believe that the Chinese aviators who were trained to fly the Caudron machines in Peking proved fairly successful and the sangfroid shewn by the average chauffeur proves that as far as coolness goes there is no reason why Chinese pilots should not do well. On the other hand even with the most stable machines considerable initiative is required to meet unusual conditions, especially of course in rising and landing, and it would be necessary to put every pilot through an elaborate course of mental and physical tests such as is used in all military schools of aviation before expensive machines could be entrusted to them.

Without wishing to appear at all pessimistic, we also venture to prophesy that all kinds of foolish obstruction will arise from parochially-minded but sincere officials. This is especially likely to be the case if the pilots are foreigners, as they must necessarily be for some time especially for passenger carrying planes.

Some of the benefits that a good system of aerial transport could confer are enormous. Places which now require months to visit could be almost regarded as week-end trips. Routes which can only be traversed by hardened travellers would be eliminated. Mail, which now takes weeks, could be delivered within a day or so and from a political point of view contact could be obtained with outlying regions with almost as much ease as is now the case with, say, Soochow from Shanghai.

Profits from Exchange

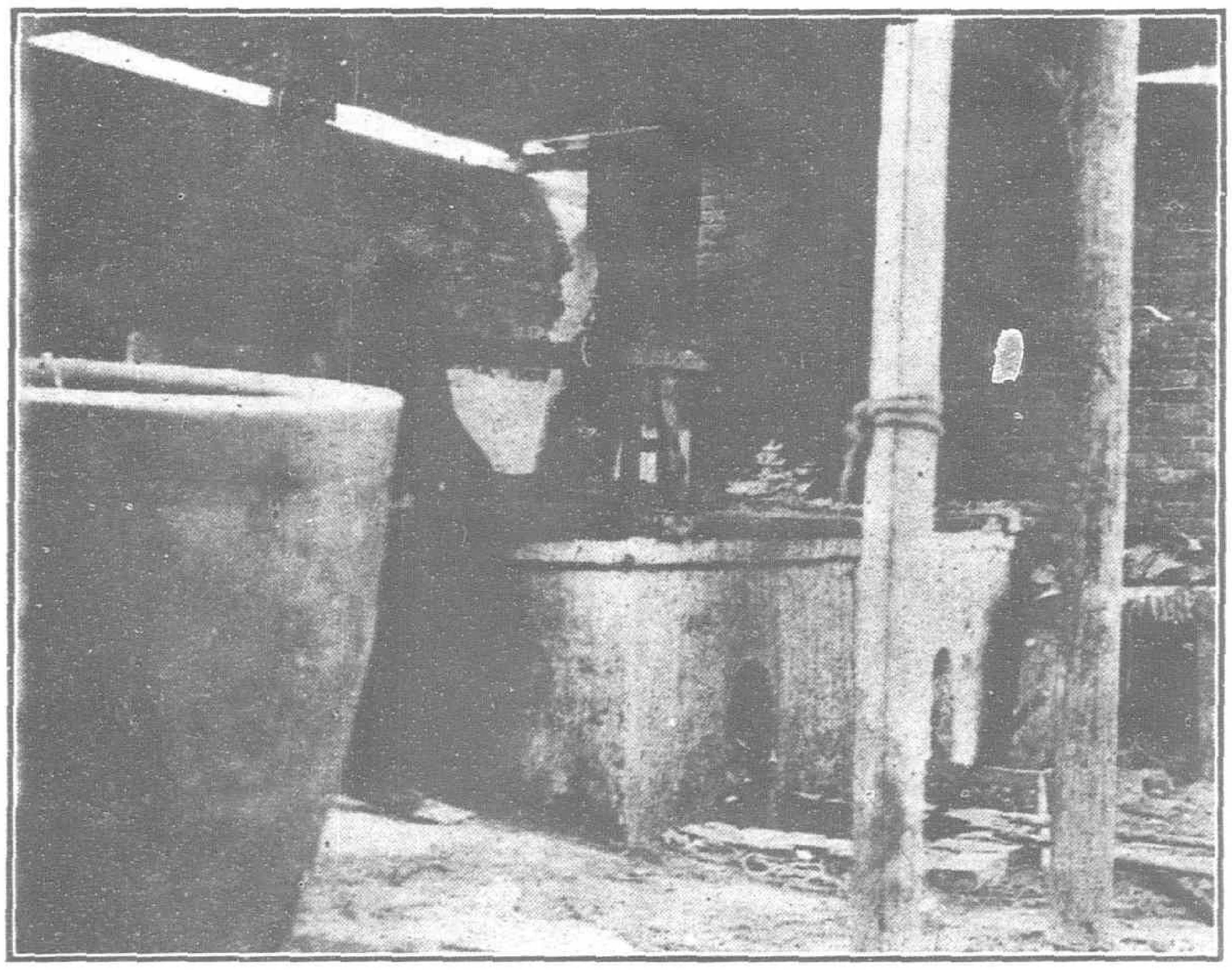
How exchange has favored industrial companies operating with gold capital upon a profitable basis in China during recent years is strikingly illustrated in the case of the Chinese Engineering and Mining Company, Ltd., which is combined with the Lanchow Mining Company, under the Kailan Mining Administration. The rate of exchange at which the Engineering and Mining Co.'s share of the profits of the Kailan Mining Administration for the year ended June 30, 1916, figured in the profit and loss account was 1s. 11$\frac{1}{16}$d. per silver dollar. The rate at June 30, 1917, was higher, being 2s. 5$\frac{1}{2}$d. per silver dollar, while the rate for the year ended June 30, 1918, was 3s. 2$\frac{1}{3}$d. per silver dollar. These figures are significant, and the actual effect they had upon the sterling returns of the Company can be appreciated when it is remarked that the Company's share of the profits of the Kailan Mining Administration for the year ended June, 1918, which totalled $3,299,397, silver currency, produced about £120,000 more in sterling than it would have done at the rate which figured in the accounts of the preceding year. This is a situation in which money is earned without effort by organizations on gold capitalization, but conversely the business established in a silver country which derives its income from countries enjoying the stability afforded by a gold standard suffers seriously while silver soars as it has been doing during the past few years. No-one wants to see enterprises robbed of unearned increment but the introduction of a gold standard in China would in the end be better for everyone engaged in business, and would no doubt be welcomed by all except exchange speculators.

Self-Luminous Paints in War and Peace

Self-luminous paints were largely used during the war for the dials of watches and instruments, for trench signs, for buoys, and many other purposes. Very little was known of the best composition of such paints and the best way of using them until Professor Clinton of University College, London, and Mr. J. H. Dow of the Illuminating Engineering Society of Great Britain carried out tests with special forms of electric glow-lamp photometer. They used paints made of radium bromide and zinc sulphide, which at first show a quick rise in the light given off, followed by a slow decay. They found that if more than a certain minute proportion of radium was used, the light fell away so rapidly that no advantage was gained. They also found that the same thing happened if the paint was laid on too thickly. Owing to the high cost of radium these results enabled big savings to be effected in the expenditure on self-luminous paints during the war. They will be no less valuable in peace, when the use of these paints is developed for the illumination of instrument dials, electric switches, signs and signposts, buoys, and other things where it is desirable to provide permanent visibility.

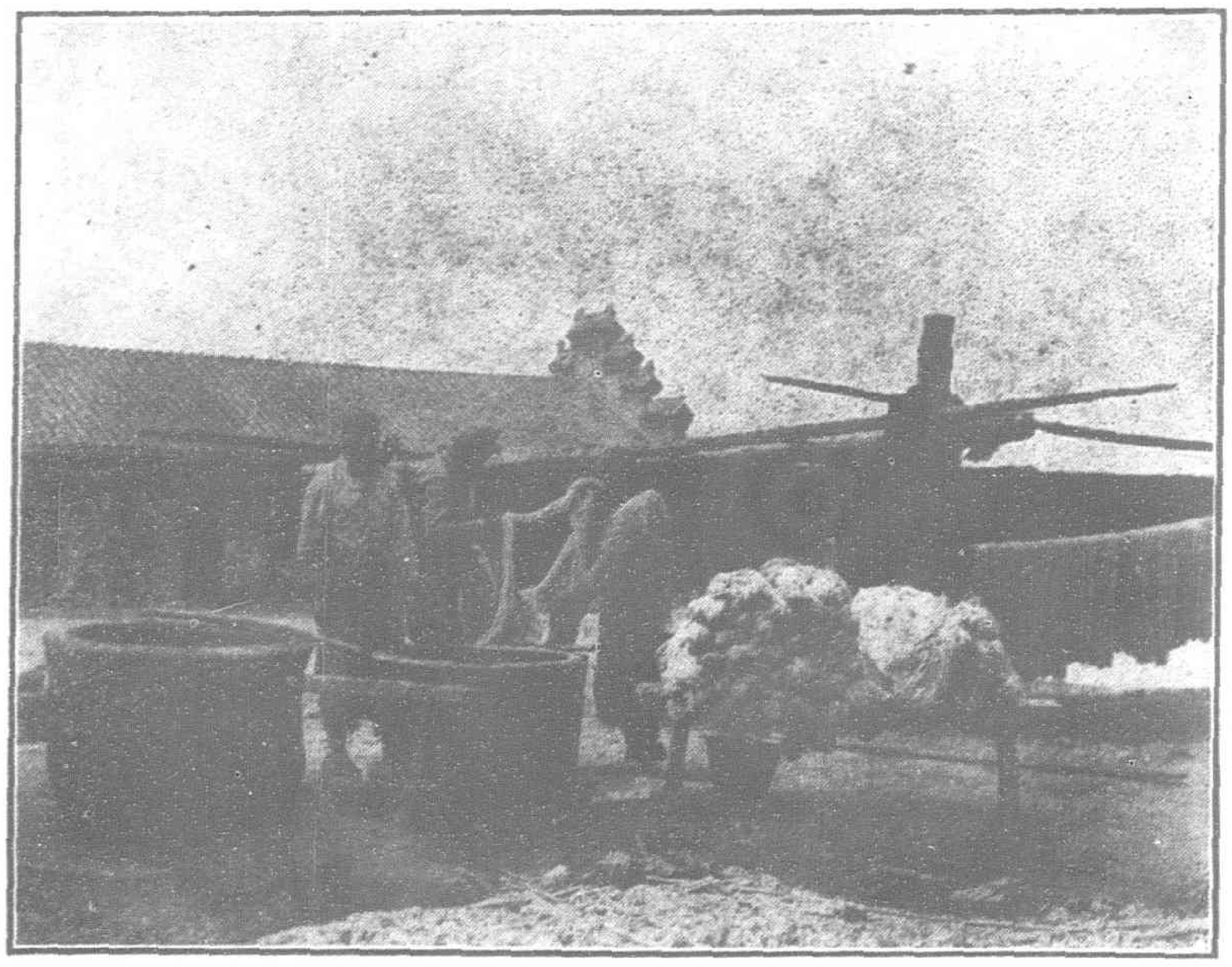
Killing the Chinese Rug Industry

In the March, 1917, issue of the Far Eastern Review appeared an article by Rodney Gilbert on the subject of the manufacture of Chinese rugs and carpets in Tientsin, which at the time of which he wrote appeared apt to become a new and important industry in China. Up to that time the Chinese were making rugs honestly and selling them at a fair price, the product was in demand overseas, and many new customers had appeared on the scene. Mr. Huston, the United States Consul at Hankow, has added what appears to be the final chapter in a report made to Washington in April of last year; for the rug weavers of Tientsin have very nearly succeeded in strangling a trade which held out much promise.



A TYPICAL DYE BOILER

According to Mr. Huston's report toward the end of 1915 a large number of American dealers and dry-goods merchants arrived in Tientsin and Peking in order to buy Chinese rugs, which had become a fad in the United States. A large number of these men were speculators with small means and large ambitions. Backed by a few thousand dollars cash credit, they placed orders with the American firms already in the business for many thousands of square feet of rugs to be delivered at a later date.



DYEING WOOL FOR CARPET MAKING

At that time exchange was roughly $25,000 Mexican for $10,000 United States gold. Since that time freight has risen enormously. In 1915 rugs worth $10,000 Mexican could be landed in the United States for something close to $5,500 United States gold. To-day rugs worth $10,000 Mexican would cost nearly the same amount in gold to lay them down in America.

These speculators, inexperienced as they were in matters of exchange, naturally failed to realize the large profits of which they had fondly dreamed. Cabled requests for money on the part of the American firms in Tientsin and Peking were only met by the cancellation of orders.

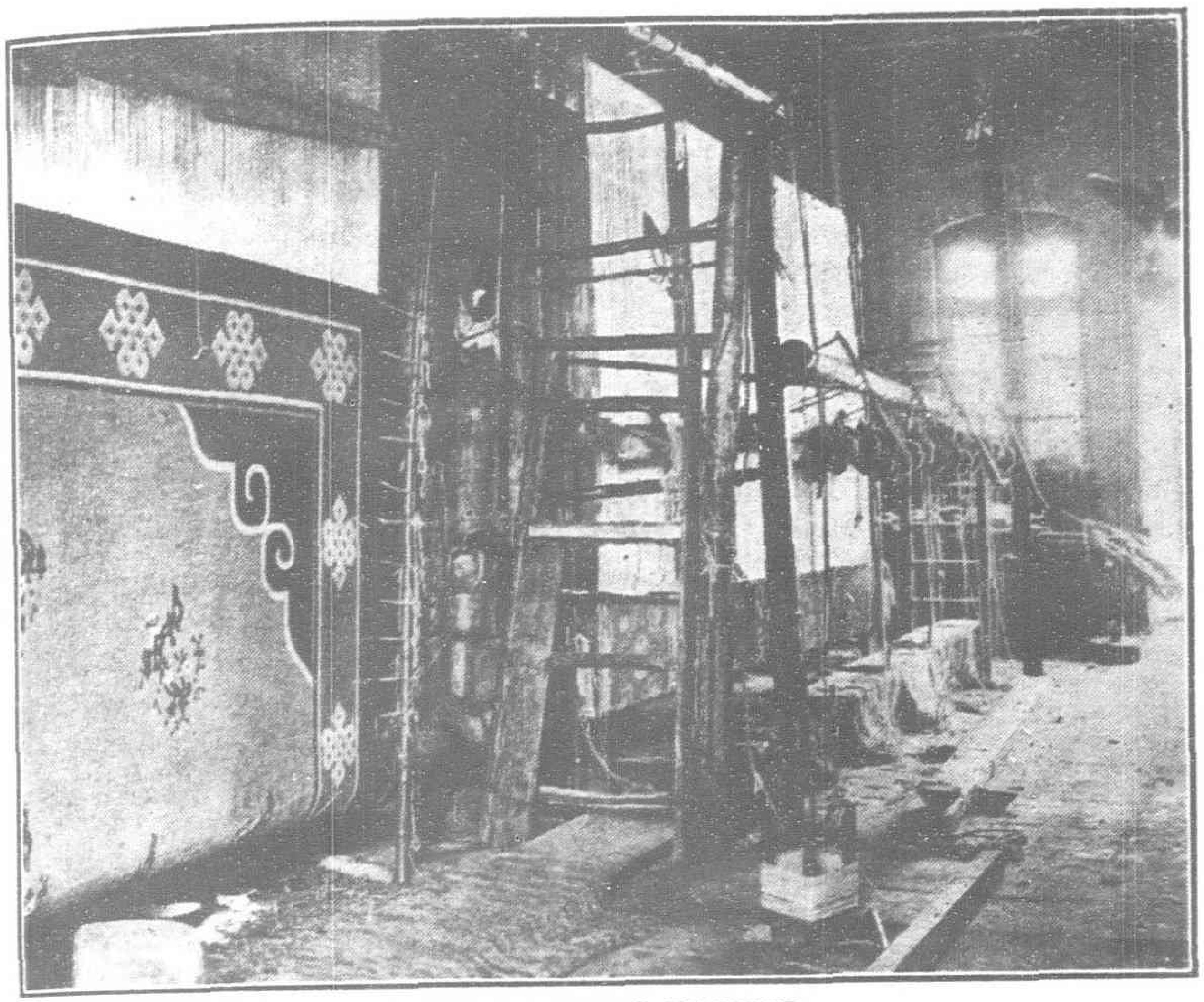
This sudden demand for large orders caused the prices to increase considerably. Weavers who had barely been able to turn out 5,000 square feet a year accepted contracts for 20,000 square feet. Wages increased from 25 cents to 80 cents Mexican a day. Formerly the number of apprentices had been greatly restricted, but now they were taken into the guild and promised greater privileges and better food. Many half-trained apprentices were admitted and paid as fullfledged craftsmen. The price of wools and dyestuffs went up accordingly. In six months more than 200 new shops had been established in Tientsin and Peking, and rug values had jumped 200 per cent. while the quality decreased fully 50 per cent. Instead of pure first-grade wool, a combination of cow hair, cotton, and jute was used.

CHINESE BOYS MAKING RUGS

Then came the inevitable reaction. Instead of new orders, the foreign commission houses received cancellations. When the boom was at its height many foreign concerns who had had no previous experience went into the rug business. In most cases they did not know good wool from bad, and as a result a lot of rubbish was shipped to the United States at highest prices.

The weavers in some cases had thousands of feet of rugs on hand, but no cash. They in turn owed the wool dealers, cotton-yarn dealers, dyers, and employees. The only way to obtain cash was to sell the finished product to the foreign buyers in Peking and Tientsin, who were asked to take the stock off their hands at 20 per cent. below contract price.

Each foreign firm has a Chinese manager, called a compradore, who arranges all deals between the Chinese and his firm. He receives only a nominal salary, but puts up a large cash bond. When paying bills or receiving money for goods bought or sold he is allowed to deduct a commission. Some years ago an agreement was drawn up between the carpet guild and most of the compradores of the foreign firms, stating that the firms should deduct a cash discount of 2 per cent. upon payment of carpet bills and that the compradores should not be permitted to make any further reductions. Some, however, are supposed to be taking a much larger commission. In some of the foreign firms who deal in rugs the compradore owns his own rug factory, but generally under a fictitious name. Orders given by the firm are placed in the compradore's factory, and no dealer is allowed to quote prices to the head of the firm which might conflict with the interests of this man.



A RUG PARTIALLY FINISHED

All this has resulted in a severe restriction of rug exports, as the Customs figures will prove. Exports of rugs and carpets from Tientsin, in point of money value, have been as follows in recent years:

1912	Tls. 45,743
1913	73,952
1914	77,475
1915	131,792
1916	737,994
1917	769,640
1918	319,724

While the figures for 1917 and 1918 look promising, it is important to remember that they represent money value, and not quantities. At the prices then prevailing for the inferior product, they represent about one-third the quantity that a similar amount of silver would have purchased in 1914.

Chinese Mining and Engineering Company, Ltd.

The profits during the fiscal year ended June 30, 1918, of the Chinese Mining and Engineering Company, Ltd., which operates coal mines at Tongshan, Chihli Province, showed a substantial increase over that of former years, the figure being £576,555 as against £291,562 in the preceding year. Mr. W. .F. Turner, the chairman at the sixth annual meeting of the Company in London in December, explained that this was due to several causes. First, there has been a small increase in the total sales of coal, which amounted to very little short of 3,000,000 tons, the exact figure being 2,996,668 tons. Next, owing to various causes, there has been an increase in the profit per ton, and finally the profits have again been materially increased by the rise in the rates of exchange, which continued throughout the year.

After adding interest in China, less some trifling expenses, the profit brought to the credit of the account is £546,549. Interest, £37,049, shows a large increase over the preceding year, owing to the rapid accumulation of funds. The other items, amounting together to £4,265, require no comment. The total credit of the profit and loss account is £587,000. The expenses on the other side of the account were practically the same as in the preceding year. Subscriptions to British and Belgian relief funds amounted to £2,000.

The balance for the year was £576,555. To this was added the surplus from the preceding year of £202,835, after deduction of the final dividend and also of excess profits duty, making a total credit of £779,390. On the other side income tax absorbed £54,023. Reserve for excess profits duty was estimated at £350,000, which compared with £83,810 for the preceding year. An interim dividend of 5 per cent., free of income tax, was paid on May 15 last, amounting to £50,000, the sum of £325,367, which remained, being carried to the balance sheet. Out of this a further dividend of 10 per cent., was declared, free of income-tax, making a total of 15 per cent., free of income tax, for the year, which left a balance of £225,367.

The balance sheet totals showed an increase of over £400,000. There was an increase in the creditors in round figures of about £100,000. This was due almost entirely to dividend and debenture coupons and to debentures drawn for redemption which have not been presented for payment, and this was due to the conditions brought about by the war. Large numbers of bearer shares and of Kailan bonds are held in Belgium and in the recently occupied parts of France. These arrears have consequently been accumulating since the end of the year 1914, and now that these countries have happily been liberated, and when free communication with them has been fully restored, the liabilities will rapidly decrease. The liability for the half-year's interest on the debenture issue, £32,400, became payable on July 1, 1918. The 6 per cent. mortgage debenture issue was reduced by drawings from the original amount of £1,200,000 to £1,080,000, and there is now the sum of £132,000 to the credit of the redemption of debentures reserve account. The assets showed a large increase in the cash and investments. The cash at bankers was £177,000, the 5 per cent. War Loan at cost was £246,000, and the 5 per cent. National War Bonds were £570,000, the total being over £993,000. The cash at bankers and in hand in Brussels on May 31, 1915, was £68,842. Practically the whole of this amount was seized by the Germans during their occupation of Brussels and carried off to Berlin, but the repayment of this amount by the Germans was to have been made last December. The debtors, £83,885, were about £10,000 less than in the previous balance sheet. The Kailan Administration working capital account showed a small increase at £89,901. The item, stores taken over by the Kailan Mining Administration, £63,928 was unchanged. The Kailan loan account, which stood at £60,000, was reduced by £9,856, being the Company's proportion of the cost of the dredging plant, which was represented in the next item of the balance sheet by 9,881 shares in the Chinese Dredger Company, Ltd., costing £9,858. That company owns the dredging plant which is used in the harbor of Chinwangtao. Shares in China, £409, were unchanged. The item expenses of underwriting and issue of Kailan bonds was reduced by £1,725, and now stands at £76,762. Taking the cash and the investments together, amounting in round figures to £1,062,000, and deducting therefrom the whole of the liabilities, which amounted to £740,000, there remained a cash surplus of £332,000, out of which had to be provided the dividend of 10 per cent.

As regards the mines which are worked by the Administration, development work was fully maintained during the year, and the coal in sight at June 30 last was reported as 20,145,000 tons, as compared with 15,960,000 tons at June 30, 1917.

The Kailan Administration was working under considerable disadvantage in regard to shipping, their own boats, the "Kaiping" and "Kwangping," being still under requisition to the Government, together with two, if not three, which they held under charter. The Chairman explained that there has been, and there is still, considerable difficulty owing to the shortage of rolling stock on the Chinese railways, but Major Nathan has dealt very ably and successfully with both these matters in the past, and now that hostilities in Europe have ceased these difficulties will tend to diminish as time goes on.

Eggs and Egg Products a Thriving Chinese Export

The export of eggs and egg products is growing into a fairly large trade in China. During the years of the War the overseas demand has greatly increased the export of dried and preserved eggs, and the total value of the trade now reaches some 14 million gold dollars annually. The high price of silver has nearly doubled the cost of the product in gold currency, but this even together with high freight rates and infrequent sailings has not been able to curtail the export. Where refrigerator space is lacking, the eggs are dried or preserved, or shipment is made only in cold weather, and so in one form or other the egg trade continues throughout the year.

Eggs are bought in China by weight and by piece. The former method has many obvious advantages to the purchaser, as the tendency to hold back large-sized eggs is natural; but since the war there has been a movement to sell by the thousand. During the spring and fall seasons, that is, in March, April, May, and June, and in September, October, and November, eggs are collected in the small market towns daily and are there bought and offered in the larger towns twice a week. In some Provinces, notably Shantung, practically three-quarters of the whole lay is marketed, the value of eggs as a source of ready money outweighing any consideration of their use as a food. The exporters and egg factories deal through commission merchants and sometimes maintain direct buying agencies in the larger towns. Competition, however, is leading more and more to direct dealings with the farmers by travelling buyers, who advertise, buy, and ship from local points

Testing eggs is naturally an important and difficult procedure. Many things besides freshness are considered, for instance, shape, color, hardness of shell, and cleanliness; but testing for freshness is the most important. In general this is done by experts, and the following points are taken into consideration:

1.—Lustre of the egg shell against the light.
2.—Appearance, whether oily, with pores filled up.
3.—Air space in shell discernible against light.
4.—Dislocation of the fulcrum, ascertained by floating the egg in water.
5.—Mixture of white and yolk, determined by rolling.
6.—Sound of egg by shaking.
7.—Specific gravity.

One of the results of the large exporters sending representatives to the small towns is that the eggs are candled before they reach the larger markets, and purchasers in these places must exercise redoubled vigilance.

Shipments from small interior points to factories and preserving plants and from Shantung to Japan, Vladivostok, and to Chinese ports, are made in wooden boxes which were originally designed to hold two 5-gallon cans of kerosene. These boxes hold 280 large, 300 medium, or 360 small eggs, which are placed in layers about half an inch apart and well packed with rice hulls, wheat bran, kaoliang bran or sawdust. Larger oil containers holding 1,000 eggs are also used. In general, the eggs are separated into large, medium, and small size, and the number in the box indicate the size. In this way the disadvantages of dealing in weight have been partially overcome, although there is much leeway for dishonest practices unless the packing is supervised.

Packing expenses per box of 280 to 300 eggs average as follows:—

Kerosene box	$0.091
Straw cord	.018
Rice hulls	.045
Labor	.018
Drayage to wharf	.009
Total	.181

In addition to these expenses, the following charges per 1,000 pieces in connection with exportation are of interest: Export duty, $0.0345 gold; wharfage dues, $0.1177; and custom brokerage application, $0 1884.

The 1917 market prices in most large export centers, such as Shanghai, Tsingtau, and Tientsin, range as follows per 1,000: Large-sized eggs. $5.48 gold; medium, $5.03; and small, $4.57.

Recent reports indicate sharp advances in these prices, and eggs now are generally reported to be worth about $0.01 gold apiece. This price would be reduced by one-half with the return of silver to its normal value, provided no increase is made in the silver price of eggs in China.

The process of manufacturing the principal egg products (whole egg powder, dried albumen, liquid yolk, and dried yolk) is briefly as follows: After thorough cleansing the eggs are broken, and for individual manufacture of albumen and yolk the two are separated. After two or three days fermentation, during which time the clear liquid settles and is drawn off, the high acidity of the albumen is neutralized by the addition of ammonia. The drying is then done in shallow metal pans, coated with vaseline, in rooms heated to a temperature of 140° F. The dried albumen is put up in tins of 100 pounds net each; these tins are packed two to the wooden box, which weighs 250 pounds gross and measures 7 cubic feet.

Liquid egg yolk is run through a series of graduated sieves so constructed as to leave the final product in practically liquid form which is treated with either a 2 per cent. solution of boracic acid or a 1 per cent. boracic acid and 9 per cent. salt solution, or sometimes a straight 12 per cent. salt solution, after which the yolk is mixed in wooden drums for 15 minutes. It is shipped in barrels weighing 500 pounds gross and 430 pounds net and measuring 12 to 14 cubic feet. Some factories guarantee the yolk to keep four months from date of shipment.

Dried yolk contains no chemicals and is manufactured by vacuum machines, about 51 yolks being required to a pound of powder.

Because of the scarcity of refrigerator shipping facilities, the exports of fresh and preserved eggs declined in 1917 as shown in the following table:

Exported to—	1915		1916		1917	
	Thousands.	Hk. Tls.	Thousands.	Hk. Tls.	Thousands.	Hk. Tls.
Hongkong	105,407	767,838	100,489	733,776	79,422	600,665
Japan (including Taiwan)	108,363	707,184	91,389	580,906	67,262	427,341
Russia and Siberia, by land frontier ...	17,582	142,179	21,145	450,194	19,412	194,118
Russia Pacific ports ...	30,718	232,485	49,145	416,010	23,625	189,693
Great Britain	13,919	97,507	37,717	254,732	24,726	166.868
Macao	7,607	80,426	8,031	92,155	9,263	89.857
Singapore, Straits, etc.	16,416	113,008	15,561	109.268	8,834	72,729
All other countries ...	44,317	544,789	30 534	333,796	14,856	129,026
Total	344,329	2,685,419	354,011	2,970,837	247,408	1,870,297

The average value of the haikwan tael in United States currency is estimated by the Treasury Department to be $0.62 for 1915, $0.819 for 1916. and $1.08 for 1917.

Of the fresh and preserved eggs exported in 1917, Shanghai shipped 24 per cent., Tientsin 20 per cent., Hankow 11 per cent., Swatow 8 per cent., Harbin 8 per cent., Manchouli 7 per cent., Canton 6 per cent., Lappa 5 per cent., and other ports 11 per cent

Below are given the quantity (expressed in piculs of 133⅓ pounds) and the value of frozen eggs exported from China during 1915, 1916, and 1917:—

Exported to—	1915		1916		1917	
	Piculs	Hk. Tls.	Piculs	Hk. Tls.	Piculs	Hk. Tls.
Great Britain	99,705	822,595	174,530	1,582,178	26,137	297,974
France	—	—	157	1,243	—	—
Russia, Amur ports ...	22	2,327	4	464	—	—
United States (including Hawaii)	6,446	51,020	1,240	24,804	3,987	97,076
Australia, New Zealand, etc.	—	—	5,192	49,548	5,547	53,039
Total	106,173	875,942	181,123	1,658,237	35,671	448,089

Nanking shipped 52 per cent. of the frozen eggs exported in 1917, Hankow 37 per cent., and Shanghai 11 per cent.

The rapid expansion in the manufacture of egg products is reflected in the increase in exports of egg albumen and yolk since 1915, as shown in the accompanying table (quantities are given in piculs of 133⅓ pounds):

Exported to—	1915		1916		1917	
	Piculs.	Hk. Tls.	Piculs	Hk. Tls.	Piculs	Hk Tls.
United States (including Hawaii)	27,257	1,415,413	40,427	1,957.525	154,541	6,055,042
Great Britain ...	130,328	2,723,784	211,334	4,442,170	216,464	4,868,333
France	20,666	417,557	20,155	728,945	9,255	430,727
Canada	—	—	965	30,767	4,974	219,997
Japan (including Taiwan) ...	163	10,285	7,114	371,783	3,747	149,054
All other countries	12,553	297,886	8,351	171,213	16,038	276,531
Total ...	190,967	4,864,925	288,346	7,702,403	405,019	11,999,684

Of egg albumen and yolk shipped in 1917, 41 per cent. came from Shanghai, 34 per cent. from Hankow, 12 per cent. from Nanking, 10 per cent. from Tientsin, and 3 per cent. from other ports.—*U.S. Commerce Reports.*

The Struggle for the Fenghuangshan Iron Mines

Agitation still continues with regard to the Fenghuangshan deposits and the desire of the Japanese firm of Okura & Co., to consummate the agreement they made some time ago with certain Chinese. The agreement was for a loan which was used to assist the monarchy movement of the late Yuan Shih-kai. The agreement was not confirmed by the Chinese Government, and the Japanese interests have been pressing assiduously for some time to have a new agreement written or to have the old one ratified. In the meantime the Chinese of the region where the deposits lie have been protesting against the employment of Japanese capital in connection with development, and altogether the Government stands between the devil and the deep blue sea.

On March 14 the President of the Kiangsu Provincial Assembly, the Chairman of the Nanking General Chamber of Commerce, and the chairman of the agricultural and other societies at Nanking, jointly telegraphed to the President, the Cabinet, and the Ministry of Commerce and Agriculture, at Peking, as well as to Messrs. Chu Chi-chien and Tang Shao-yi, the Chief Delegates at the Internal Peace Conference at Shanghai, protesting against the disposal of the iron deposits to Japanese interests. In their protest they voiced various allegations in connection with the transaction, stating they had heard that Messrs. Okura & Co. had handed over Yen 25,000,000 out of a loan for Yen 100,000,000 which had been entered into by the Ministry of War in return for the right to exploit the mines within a radius of 50 li of Fenghuangshan and set up kindred interests such as iron or steel works. The alleged agreement, which we give below, calls for a joint enterprise with 60 per cent. of the stock in the hands of the Chinese and 40 per cent. in the hands of the Japanese.

The Parliament in Peking was also inquisitive, and in reply to interpellations by certain members the Government replied as follows: "When the Huaning Company, in contravention of the laws of the country, received an amount of $1,000,000 from the Japanese firm "Ta-chang," agreeing to sell to the latter the ores of the iron mines of Fenghuangshan, the Cabinet decided to cancel the mining permit of the said Company. Later on the Japanese Legation protested, but the Ministries of Foreign Affairs and Agriculture and Commerce remained firm. With the object of preventing future trouble the Ministry of Agriculture and Commerce cancelled the registration of the Company and declared the agreement made by it with the Japanese firm to be null and void. However, the Japanese Legation is still complaining against this measure, which, it says, has caused serious losses to the "Ta-chang" Company. Hence the case is still outstanding. As to the project of the Mei-lin Company for the operation of the Fenghuangshan iron mines, no permit has yet been issued by the Ministry of Agriculture and Commerce. Therefore, all the reports in connection with the co-operation of the Japanese firm with this Company are not true . . . . But should there in future be any necessity for borrowing foreign capital to develop the iron mines of the country without impairing its sovereign rights, the Government will not absolutely refuse the co-operation of foreigners, etc."

The preliminary agreement said to have been entered into with Messrs. Okura & Co. is reported to be as follows:

The Alleged Okura Agreement

Article I.—The Iron Mines referred to in this Agreement are the Fenghuangshan Iron Mines and those located within a radius of 50 li.

All those mines which have been operated by merchants shall be taken over by the Government. If any understanding or connection has been established by the said merchants with foreigners, the same shall be cancelled by the Government.

Article II.—All mining rights in connection with the above iron mines shall belong exclusively to the Ministry of War.

Article III.—The Ministry of War and Okura & Company shall jointly establish an ironworks. Of the entire capital China shall subscribe 60 per cent. and Japan 40 per cent. China's subscription shall be covered by a loan from Japan.

When the iron works is established Okura & Company shall be under obligation to respond to the requisition of the Ministry of War to undertake subsidiary enterprises in connection with the said works. Separate agreements shall be made in regard to these.

When the capital of the iron mines is to be increased, the stipulations in this article shall govern.

Article IV.—At least half of the output of pig iron produced by the works shall be supplied to Japan.

Article V.—The entire capital shall be Yen 100,000,000 (100 millions).

Article VI.—When the Agreement is signed, Okura & Company, in accordance with the foregoing Article, shall pay in advance one quarter of the entire capital (Yen 25,000.000) and deposit the same in the Bank designated by the Ministry of War. The deposit receipt, however, shall be held by Okura & Company.

Article VII.—This Agreement shall come into effect when it is signed by the contracting parties.

The above Seven Articles have been thoroughly discussed and agreed upon by the Ministry of War and Okura & Company and have been sent by the former to the Ministry of Agriculture and Commerce for ratification.

Owing to the absence of Minister Tien Wen-li, (of Agriculture) who has gone to Changtehfu, the matter is temporarily suspended.

The Federated Malay States Railways

The working of the Federated Malay States Railways during the year 1917, as recorded in the Report of Mr. P. A Anthony, General Manager and Chief Engineer showed a net profit of $4,168,322.06 compared with $4,027,288.54 in 1916, and representing 3.95 per cent. on the total capital expenditure against 3.94 in the previous year.

The outstanding features of the year were :—

(*a*) The increase of 50 per cent. in the passenger fares which came into operation on the 1st of March, 1917:

(*b*) the curtailment of Sunday train services from 1st December, 1917;

(*c*) the increasing difficulty in obtaining supplies of fuel, stores and materials necessary to maintain the railway and its services at a proper standard of efficiency.

In connection with the increase in passenger fares it is important to note that this measure has justified itself by results. The effect, which the alteration was designed to produce, was a reduction in the number of passengers carried without disturbing to a serious extent the revenue of the undertaking. The result has been a reduction of over 2,700,000 in the number of passengers carried, and an increase of over $1,033,000 in the receipts.

In consequence of this it became possible to introduce into the accounts for the year a contribution from the railways to the Imperial Government of $857,143 (£100,000) for war purposes.

Since the accounts for the year were closed it has been decided that the contribution should be increased to $1 033,254.56, the balance of $176,111.56 being paid in 1918 and appearing in that year's accounts.

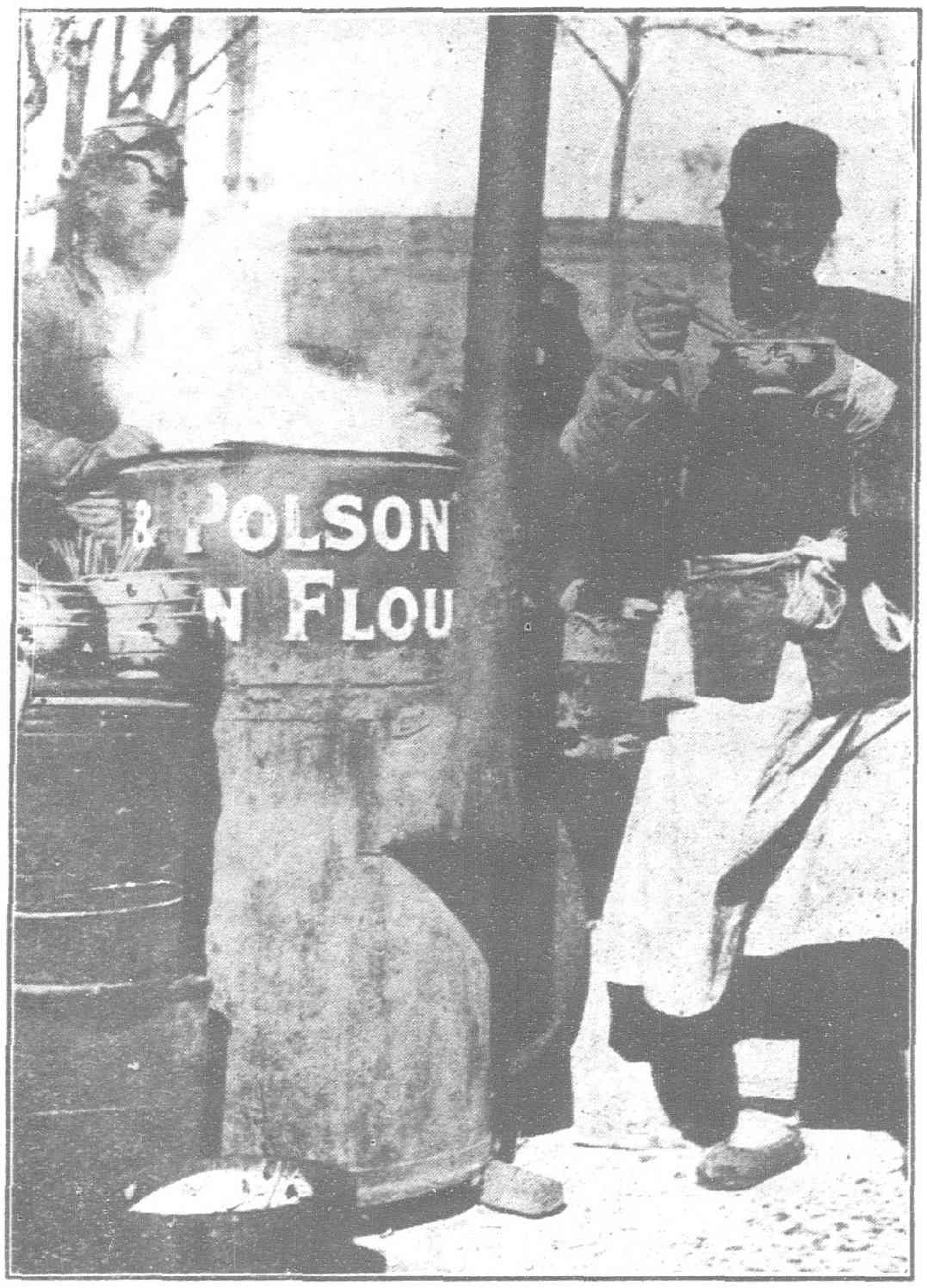
Handsome and imposing new Central Offices at Kuala Lumpur have been completed, and they were actually occupied as long ago as the 29th September, 1917.

An interesting report with regard to the F.M.S. is the statement just telegraphed that the Straits Legislative Council is calling for the construction of a causeway between Singapore Island and the mainland of Johore, thus bridging the arm of the sea which is at present linked up by a ferry service.

Chinese Reclamation of Waste Material

How Discarded Materials and Imported Refuse are Put to Use by a Frugal People.

The Chinese genius for the utilization of what would otherwise be waste material is typified very well by the scavengers who follow up the tracks of the Chinese wheelbarrow to recover the discarded sandals of the barrow coolies. The sandals, which are woven from dried rushes or straw, are the foot covering for burden coolies of all descriptions. They cost only 30 cash the pair, or something like one or two gold cents, and stand the wear imposed by the coolie as he trudges along under his heavy burden for a very few days at best, but in wet weather they disintegrate quickly. It is in the rain or snow that children and women of the most poverty-stricken class appear in force, shouldering a bamboo pole, which is loaded down with broken sandals in a few hours, when they make off for their huts to discharge their haul and return for another load. The old shoes are applied to several uses. Dried in the sun, they become the fuel of the scavengers, or, pulled into bits, they are sold in quantities to makers of native paper; while those which are discarded in a slightly worn state by extravagant coolies are cleaned, patched up, and put on the market again. The natives in South China know this form of sandal by the euphonic name of "thousand-*li* horses," from a reference to them in early literature as having the virtue of carrying a man a thousand *li* without fatigue, and the wearer of "thousand-*li* horses" comes from about the lowest class in the Chinese industrial scale. He is so poor, and sweats so copiously for the few coppers he earns each day, that it is hard to believe he could afford to reject anything of even infinitesimal value or that there could possibly be a lower class that would be interested in his wastes. Gathering discarded "thousand-*li* horses" might truly be called the furthest frugality, and although the practice is not so widespread or important as to become a substantial element in Chinese commerce it is still typical of the minute economies of the Chinese.



CHINESE ROADSIDE SOUP KITCHEN MADE FROM A SHEET-IRON SIGN

Another waste material put to use by the Chinese, although in this case coming from over the sea, is broken or worn horseshoes which have been gathered from smithies and shipped in cases or bags to Chinese ports. The import of these into Shanghai alone has often aggregated as much as Tls. 75,000 a year in value. The commonest use for old horsehoes is the manufacture of Chinese razors and knives. Razors made of horseshoes which have been hastily forged and tempered for a cheap market often show traces of the old nail holes of the horseshoe, in the thick edge of the blade. Old horseshoes seem well adapted for the manufacture of the native razor, which at best is a crude, unpolished device with a blade an inch and a half wide and two inches in length, and some quarter-inch in thickness at the top edge. Horseshoes form only a small portion of the total Chinese imports of old iron. Rusted and worn out metals of all shapes, including such things as railway spikes which have outlived their usefulness in service, are imported in great quantities and are fabricated into crude native nails—which, instead of having a flattened portion as a head, are curled over at one end—and a thousand other odds and ends of ironmongery.

Old bottles and tins bring a small but steady revenue of tea money to the servants in foreign households in China. Every day hawkers who buy old containers walk through the lanes in the rear of foreigners' houses, with a peculiar cry to announce their coming, and the houseboy in need of a little pocket money will bring out his store of tins and bottles and make a bargain with the buyer. Bottles have no fixed value, their worth depending upon a varying demand for them for such uses as containers for native medicines, and, when of a shape which identifies them with a certain brand of liquor, for illicit refilling. A popular brand of imported salt in China is packed in wide-mouthed jars with a capacity of a pound, and these jars are in demand among shopkeepers for holding dried and preserved native dainties for display. Two or three tins of the size known as "No. 2" are worth about a gold cent. The solder is melted from the tins and the sides and bottoms are straightened out and sold to native tinsmiths for a thousand uses and to native canners for making into fresh tins. Imported cigarettes are often packed in round tins holding fifty, and these tins are particularly valuable for being free from rust, having contained no liquid. A ton of old tins will probably assay more wealth in the form of solder and old metal than a ton of "pay dirt" from many gold mines prized for their wealth, and more labor and capital are applied to the recovery of "pay dirt" of lesser value than old tins.

Kerosene oil is largely sold in China in square tins containing about five gallons, and two tins are usually packed in a wooden case, this packing being adapted to the means of transport in the interior. These oil tins are put to uses so many and varied that no attempt could be made to list them. A common use of oil tins, however, is in the manufacture of dust-trays, used in sweeping floors. One of the square tins is cut through diagonally from corner to corner, making two scoops, and after the edges are turned over they are ready for the market. The complete tin is often turned into a sort of hand-bag or traveller's box, and sometimes with one side cut off and with four wooden spools added for wheels is put to use as a baby carriage. It is not thought necessary to smooth out the Chinese characters representing the brand, which are embossed in the tin, and it so happens that the familiar ideographs representing the name of the Standard Oil Company are often seen on a hundred different kinds of household utensils, altar decorations, native foodstuffs which have been prepared in pans made of the oil tins, and tin "flashing" or reinforcing in native architecture.

Two empty oil tins and the accompanying wooden case are worth about a Mexican dollar, at the present time when the price of tin is high. Often the retailer of kerosene, who buys his oil by the case and sells it at a close margin of profit to insure a quick turn-over of his capital, will sell the kerosene at a price which is less per gallon than he paid for it, looking for his profit to the sale of the empty tins and case and nearly always even rebating part of this profit to the retail consumer. In fact many native dealers in imported goods take their whole profit from the sale of empty containers. Imported cigarettes, for example, are sold in a tin-lined case costing, say, a hundred Mexican dollars. These cigarettes are bought from the importer by Chinese agents, who are allowed a profit of perhaps $2.50 per case. These agents unpack the cigarettes, retaining the case, which is worth say $2.50, and pass on the contents to retailers at $97.50, dividing with the retailer the $2.50 gained from the sale of the empty case, each taking $1.25 on the transaction, which involves a capital of $97.50. As the agent only buys enough cigarettes each day for the known demand, and as the retailer buyers only his needs from day to day, each turns over his capital daily and feels satisfied with the small margin, for the reason that his profit is repeated seven days a week. Perhaps this practice is not invariable, but it is noticeable with certain brands of cigarettes in some Chinese cities. In any event, the profit obtained from the sale of containers is often the legitimate Chinese profit in the sale of many kinds of imported goods. Native goods are not packed in saleable containers, as a rule, or are in jars or baskets which are returned.

Even broken glass, parts of old bottles, photographers's plates and other discarded articles of glassware are of value in China. Broken glassware is re-melted and re-blown into lamp chimneys, lamps, beads, toys and other articles, and photographers' plates are cleaned of the old emulsion and are used for window panes in native architecture, in making glass tops for fancy gift boxes, and for countless other purposes. Broken glass often appears in lists of imports in the statistics of the Chinese Maritime Customs. Old newspapers form another article of import, and in former years large quantities have been bought on the West Coast of the United States. The newspapers are of service in making pulp which is pressed into a kind of board used in making the soles of old-fashioned Chinese shoes and for other purposes. One of the latest forms of reclamation of waste material is the use of old automobile tires for the manufacture of shoe soles. The other day a rickshaw coolie wearing sandals made of an old motor car tire was seen walking down a Shanghai street, and his footsteps were making the print of a non-skid tread widely used in America.

Even advertising matter has a market value in China. Circulars, booklets, calendars, wooden signboards, tin signboards, samples—everything that can be possibly applied to any practical use is seized with avidity by the natives and reaches the ultimate consumer at its market value according to the raw material it contains. In the way of paper advertisements, perhaps calendars of Chinese design, such as foreign firms prepare and distribute to their customers at the lunar New Year, have the greatest value. About the time of the New Year holidays hawkers walk about with rolls of calendars and also display them in bazaars or hang them on a bit of wall or a quiet doorway. Calendars bring from twenty cents to a dollar, Mexican, according to the beauty of their design in Chinese eyes. Circulars are valued as writing paper, when they offer a blank space for the purpose, or for making spills for lighting pipes, or for pulp making or a hundred other uses, when so covered with print as to be valueless for writing purposes. A large foreign tobacco manufacturer distributes lithographed circulars the size of the conventional writing paper, with the reverse blank save for the vertical lines used in writing the columns of Chinese script, and these are widely used for business correspondence. Advertising signboards are usually distributed to Chinese dealers according to their purchases of the product they advertise, but it is doubtful if such boards are ever applied to the use intended. They quickly reach the hands of second-hand dealers, and reappear in countless services. The Chinese mind cannot countenance waste, and the dealers cannot understand that such advertising devices would have a greater value when posted about his shop than when converted into building material, or worked up into metal objects.

The most popular sort of signboard on the second-hand market is the enamelled iron variety. Some of these are purchased abroad from stocks of discontinued styles or from the overproduction of the manufacturer, and others are those bearing no Chinese text which are sent out by Home manufacturers with shipments as a matter of routine and are acquired by second-hand dealers, as obviously a signboard in English has little value outside the few treaty ports where there are any number of readers of English. These enamelled signboards eventually appear as cooking stoves, as the walls of strongboxes, as reinforcement on the decks of junks, as buffers at the bow of sailing craft, and in so much native handicraft that their uses are too many to enumerate. Almost every dealer in metals has a few enamelled signboards in stock, and a fresh supply seems to be constantly appearing. Some familiar advertising names and phrases appear in incongruous position in China. A large signboard of enamelled iron advertising a brand of tea of world-wide fame seems to be very popular with junk masters, who nail the three sections of it on the deck of the junk at the point where cargo is thrown from the shoulders of loading coolies just forward of the cargo hatch, probably to save the deck from wear and tear. How these boards came to China is hard to conjecture—the idea of advertising foreign tea in China, and in a foreign language in addition, seems particularly absurd.

Many foreign advertisers wonder at the success of Japanese advertisers in having their signboards put to their legitimate use in China. The secret is that the Japanese secure a receipt and a guarantee against loss of their boards, and pay the shopkeeper a small annual rental for their display outside the shop. As this makes the signboard more valuable to the shopkeeper in its legitimate use than as firewood or building material, he allows it to remain. For this reason signboards advertising Japanese medicines and other products are seen in profusion all over China, while advertising devices of European manufacturers are few.

Perhaps none of these instances is comparable to the ordinary, every-day domestic economy of the Chinese people, which is not only noticeable among the poor but among the prosperous as well, for frugality is a racial characteristic of the Chinese. Nor do the instances exhaust, or do more than scarcely typify, the practices of the Chinese in their genius for thrifty trading. No other race possesses the knack of utilizing wastes so well, and certainly no other practices it to the same extent.

The Electric Workshop Repair Train

Everybody has heard about the wonderful system of light railways which the British constructed for military transport in Flanders, but only now has information been made available about the repair trains which travelled backwards and forwards on these lines for the purpose of effecting repairs. There were six of these trains, each consisting of six vehicles, carrying electric generating plant and all necessary machinery. The cars were lighted and heated by electricity. Owing to the narrowness of the gauge—just under two feet—the sides of the vehicles containing the generators and machines were divided longitudinally and hinged at the bottom and the top so that the lower half might form a platform and the upper part a canopy when the train was "in action." During bad weather tarpaulins were fixed to the canopies and completely screened the men from wind and rain. Excellent service was rendered in many parts of the front by these workshop trains.

Mining Enterprises in Siberia

How Bolshevik Influence has Dislocated Industrial Development

The economic development of Siberia so largely depends upon the exploitation of the mineral wealth of the region that any information that can be given on this aspect of affairs should be of particular interest to all who have or intend to have connection with the country. Mining has been carried on for many years, but never with absolute freedom from difficulties, due mainly to the nature of the restrictions imposed by the laws, or the lack of communication. In what development has taken place British capital has figured largely, and probably the results achieved by the leading companies in the Urals and Siberia may be ascribed to the British enterprise behind them. Some idea of what has been done in connection with but two or three organizations can be gathered from the latest reports of British companies. The Russo-Asiatic Corporation, Ltd., whose main function is the development and financing of mining properties in Russia and Siberia, has done considerable important work, among which in Siberia may be mentioned the placing of the Ridder and the Ekibastus properties upon a paying basis, by floating the Irtysh Corporation, Limited. Investigation work carried on by the Corporation has been extensive, and, as the Chairman of the Company, Mr. C. J. Carter-Scott, recently pointed out in the course of this work, carried on by their geologists and engineers, a vast fund of geological data had been collected and collated; generalities had been formulated, tested by experience and accepted as proved or revised, associations of minerals and rocks noted and deductions made therefrom. These deductions had been put to the test by development work in the field, and their truth or falsity demonstrated. In short, they and their staff had through all these years been gaining that most difficult of assets—experience—and their whole technical organization was to-day in possession of a unique mass of data bearing on their work. It was for these reasons that they had been so successful in the last years in segregating and separating the dross from the gold, the unreliable or doubtful prospects from those which from scientific information at their disposal were certain to give results. The Ridder property had been lying forgotten and discarded for generations when they took it in hand, and the position of the Ridder Concession to-day was the best proof of what he said. With equal truth he could cite the Ekibastus properties of the Kirgiz Company. They developed vast resources of ore in the Ridder mine, and the Irtysh undertaking had passed its initial stages as a mining venture, and was now finally established as a sound industrial enterprise. By the end of 1913 they had at the Ridder proved the existence of ore having a profit value, at the price then ruling for metals, estimated at £7,400,000, and at the Ekibastus they had demonstrated a practically inexhaustible field of coal. Their direct interest in the properties ceased in May, 1914, when they disposed of them, the consideration being the whole of the share capital of two Russian companies known as the Ridder Mining Company and the Kirgiz Mining Company. Soon after the outbreak of war it was decided to form at once a company to provide capital to equip the properties, and the Irtysh Corporation was formed, their interest in the properties being represented by the shares of that corporation. Under the conditions then existing both in England and in Russia the decision to form the Irtysh Corporation was a bold one. But a great enterprise had been built up, a competent organization of technical staffs and skilled workmen had been collected, and, notwithstanding the wave of anarchy which swept throughout the country, the Irtysh Corporation was to-day possessed of undertakings which were producing revenues and which they anticipated in the near future would be in full operation. Apart from this, the mining developments and acquisitions of the Russian companies showed the properties to have a potential value much greater than they were aware of when they disposed of them and when they took the shares. Further they had received proposals looking towards the opening up of some of the mineralized areas of the Kirgiz Mining Company in the district of Ekibastus, and had, therefore, the primary advantage of accessibility and of proximity to an unlimited supply of good fuel. The properties were undeveloped in depth, and knowledge was confined to the results of surface work; but they had in this case the authority of their engineers and geologists for saying the prospects were most favorable.

The Mines at Ridder and Ekibastus

Mr. Leslie Urquhart, Chairman of the Irtysh Corporation, which operates the Ridder and Sokolni lead-zinc mines and the Ekibastus coal mine in Siberia, pointed out at the third annual meeting that the corporation was formed in 1914, soon after the commencement of the war. During the first two years of its existence there has, through its means, been built up from the very foundation the structure of a great industry—a structure so far completed that at the end of that period finished metals from the ores of the mines at Ridder were were being produced. The third year of the corporation, 1917, is that to which the reports and accounts relate. March of that year is the date of the Revolution in Russia so that for nearly ten months of it the operations suffered under constantly increasing disability, accompanying Russia's quick descent into the pit of anarchy and chaos. The fact is highly significant that, under such conditions, the operations did not stop at any time during that year, and that it was found possible to complete and set to work an important part of the plant—namely, that for the production of lead, silver and gold—thus, with the zinc plant already in operation, completely inaugurating all branches of the metallurgical programme for the extraction of the zinc, lead, gold, silver and copper metals contained in the ores.

Towards the end of the summer of 1917, the Bolshevik activities among the workers and the interference in the management of industrial concerns, with the consequent economic chaos in European Russia, were having a deleterious effect on the operations of the Kirgiz and Ridder companies in Siberia, and it was agreed that, until conditions became normal again, it was the safer policy to curtail all expenditure and gradually close down operations as far as possible. By February, 1918, however, the policy of gradually closing down and marking time had been carried out by the management both at Ridder and Kirgiz. The attempt made by the Bolsheviks in May* to work the coal mines was thus rendered abortive. The workmen, and particularly the Kirgiz, refused to work for them, and for this reason Ridder was left alone by the Bolsheviks. In order not only to protect the properties, but to retain certain members of the staffs and the most reliable workmen, as a nucleus when the time came to restart, the mechanic shops and foundries, and the companies' railways, were kept in operation on a reduced scale, all these departments being practically self-supporting on outside orders. The Bolshevists, however, were only a few months in power in Siberia; by the end of May of 1918 bands of Czecho-Slovak prisoners of war, aggregating in all some 50,000 men, joined hands with the Russians under Semenoff and their compatriots who were fighting the Bolshevists in the Far East, and by August of this year Siberia and the whole country, from the Pacific Coast practically to the Volga, was cleared of Bolshevist domination.

The influence of this movement on the Irtysh river was felt almost immediately after it had started. The management considered the time had come to restart those departments which would be self-sustaining or give an immediate profit. While the production of coal, which was restarted in August, was necessarily small at the beginning, until the mines were cleared of water, the mine equipment overhauled, and workmen gradually returned to the property, yet the production has continuously increased, so that against some 10 tons a day which was being produced in August, by the end of October the production had reached 120 tons per day, and was steadily increasing as the Kirgiz workmen were as steadily returning to work. The production of coke was restarted in November, 1917. The local prices for coal and coke are high and the production of these departments is very remunerative. The lead plant is being put into commission again, as the price for lead shot is so high in Siberia that lead smelting will yield considerable profits. It is not proposed to operate the zinc plant at present, as under existing conditions it is considered better to wait until conditions in European Russia are stable again or until the opening of the ports permits its export abroad. Apart from the machine shops and railways, which have all along been kept in operation, the mill at Ridder has been partly adapted for the recovery of gold from the tailings dumps, supplemented with gold ore from the Sokolni mine, of which there are large quantities stocked on the surface.

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* See "FAR EASTERN REVIEW," June, 1918.

The river fleet is at present being overhauled preparatory for 1919 navigation, and will be used for transport purposes.

The question of labour, owing to the changed economic conditions all over the world, looms very large in the minds of all employers to-day. During an experience going back a long number of years in the Urals and Siberia in the development of the great mining and metallurgical industries belonging to this group of Russia companies, it has always been the Russo-Asiatic Company's earnest endeavour to provide, as far as circumstances would permit, for the comfort of the workmen and their families. To this end colonies of dwelling houses, with proper sanitary arrangements, supplied with water, fuel and light, were provided; co-operative stores and vegetables gardens supplying the population at cost price; schools, churches and clubs for the men and their families; hospitals and maternity hospitals were established. All this we have done, and done well, said Mr. Urquhart, both at Ridder and Ekibastus. As we were starting a new industry in a new country, and although labor was comparatively cheap, we were able not only to introduce modern methods of mining, but we equipped all our mines and works with labor-saving appliances, and were thus able to pay comparatively high rates of wages. This policy not only attracted good workmen, but was the basis of that good feeling which has existed all along, and during these troublous times, between the management and the men. As proof of the loyalty and trust that the workmen as a whole have in the management and future of both the Ridder and Kirgiz enterprises, notwithstanding all the anarchist influences brought to bear by the extremists and Bolsheviks, and when the economic chaos in European Russia made it impossible to remit moneys to the properties, the workmen continued to work for nearly four months without wages, asking only to be provided with food, and, above all, they refused to work for the Bolsheviks. At Ekibastus the great majority of the workmen are local Kirgiz Mussulmans, a naturally peaceful and industrious people who have never caused us any trouble. Living as they do in large numbers in the district, they look upon our enterprise as a godsend, as they have practically no other source of steady employment; they would not allow Bolshevik influence to spread, or allow any damage to be done to the works. For these reasons every effort has been made by the management, and with complete success, to train the Kirgiz, who already represent about 80 per cent. of the workers at the coal mines. This fact is very important, for, while Ridder will never require a very large number of men because of the nature of the work—probably never more than 1,000 men—the contrary is the case with the expansion of coal mining at Ekibastus. For all these reasons the question of labor is one that does not present to us any danger or difficulty either now or in the future, so long as we continue to handle it as we have done. Finally, the managing director has recently cabled to us that the spirit of the workmen continues to be quite satisfactory, guaranteeing future large scale of work at the properties.

When in December of 1914 the directors of the Russo-Asiatic Corporation deliberately chose to form the Irtysh Corporation to continue to finance the development and equipment of the properties which they had sold in May, 1914, to the Ridder and Kirgiz Companies in Russia, there were many of our friends who doubted the wisdom of appealing to our group of shareholders for funds and pressing on with construction work and of attempting to bring the properties to the profit-earning stage during the war. If anything were needed to prove that we were right in our decision and in relying on the financial support of our shareholders, the record of work done and the position and value of the business to-day is a very generous justification of our confidence and of our work.

The Ridder Railway, 75 miles in length, was constructed and equipped. The Ekibastus Railway, 90 miles long, was relaid and put into running order. River transport was organized by the purchase of a large fleet of steamers and barges.

While proved ore reserves are no measure or criterion of what we can confidently expect from our great mineralized concession, we nevertheless increased the proved ore reserves from 2,448,000 tons, estimated at a profit value of £7,400,000, to 3,534,000 tons estimated at a profit value of £13,000,000, and this profit is based on pre-war prices for metals. The Sokolni mine was shown to be at least as valuable and great as the Ridder; it has been shown that for all practical purposes the question of ore reserves need never trouble us, and can only be limited by our ability to handle and smelt it.

The geological department has discovered on the Ridder Concession six mineralized belts containing the outcrops of a number of new deposits similar in character to the Ridder. Five of these belts are of the same type, but of much greater extent than that on which the Ridder, Sokolni, Krukovsky, and our other known mines are placed, while the sixth belt is similar in occurrence to the Kyshtim mineralized areas and contains several large gold-bearing iron gossans which have been conclusively proved to be the cappings of copper ore deposits.

The equipment of the coal mines has been brought up to a productive capacity of over 150.000 tons a year, and this capacity was being rapidly increased, while our coal basin was shown to contain inexhaustible reserves of finest coal.

The Ridder and Sokolni mines were developed and equipped for a large production. Power plants, machine shops, foundries, brick works, colonies of dwelling houses for the employees and workmen and their families were established. At Ridder the concentrating mill and sulphuric acid works were built and put into operation. At the collieries zinc, lead, and copper smelters, with an output capacity of 15,000 tons refined lead and 5.000 tons refined spelter per annum, with more than ample capacity for treating the accompanying precious metals, are completed and in operation. The metallurgical problems have been completely solved. In a word, this great mining and metallurgical enterprise is now established and ready to earn large profits.

The Russo-Asiatic Corporation had already expended on the properties of the Ridder and Kirgiz companies at the time of the formation of the Irtysh Corporation £284,000; since December, 1914, the Irtysh Corporation has advanced to the Russian companies and spent in and about the business £1,104,000. Credits from the Siberian Bank to the amount of over 4,000,000 roubles have also been spent on the development and equipment of the properties. When considering the expenditure made and the value of that development and equipment to-day, regard should be had to the serious decrease in monetary values all the world over, and that the expenditure to develop and equip the properties now would cost twice, nay, probably three times, what it cost us in pounds sterling when it was done. If the equipment of the properties is so much more valuable, the value of our reserves is, owing to the decrease in monetary values, immeasurably greater still. The shortage of production and the depletion of ore reserves owing to the increased rate of exploitation of the known metal deposits during the war, the fact that the new mines which have been discovered are not sufficient to make good the large depletion in the world's known non-ferrous metal ore reserves, and, finally, the increased cost of labor and production generally, make the future prosperity of this great enterprise certain and independent of the fluctuations which may affect producers of other commodities. In order to husband our resources for the important work we have in hand, the Kirgiz Company is making arrangements with the Russo-Asiatic Corporation for the development of the mineralized areas in the vicinity of Ekibastus. These contain excellent prospects of opening up into bodies of copper ore of great importance analagous to the well known porphyry copper mines of the United States, which are now responsible for more than half the copper production of America. As the holding of the Russo-Asiatic Corporation in our company amounts to, roughly, 50 per cent. of our share capital, a partnership arrangement such as we contemplate is in every way advantageous and free from complications. Our present policy is to feel our way carefully, to start those departments of work which are immediately remunerative, until gradually—and I hope this will be by next spring—the whole fabric of our undertaking will again be in full and active life. Our future construction programme will be a large one if we are going to do justice to and exploit, on the scale they should be exploited, our vast reserves of ore. But metal values are not depreciating, and by going carefully we shall save ourselves a vast amount of expenditure and unnecessary risk and recoup ourselves many times over for our caution.

Our financial position is sound. The business is well equipped; at the present moment all departments, with the exception of the zinc plant, are in operation and giving commercial results which more than cover expenses, while the enterprise as a whole is in a position, as soon as we are in full swing again, not only to cover expenses, but to earn large profits. There is a large working capital in stocks of materials and metal concentrates, of which we estimate the value to be at least £600,000, and the Irtysh Corporation has at its disposal in London some £175,000 in cash. Besides these funds there are outstanding 311,422 £1 shares optioned at par to the original subscribers of the debentures issue, the options expiring 1½ years after Peace has been signed. I have no doubt that these options will be duly exercised and will bring in another £311,422.

The Kyshtim Mines

The Kyshtim Corporation, Ltd., a British Company which holds the whole of the share capital of the Kyshtim Mining Works, a Russian Company operating copper and other mines in the Urals, had the experience of seeing their properties "nationalised" by the Bolsheviks. The profits of this Company for 1916, states Mr. C. J. Carter-Scott, Chairman of the Company, amounts to about 6,000,000 roubles, before charging either taxes or the several amounts which would have been reserved. This profit compares with 4,400,000 roubles for the previous year. The scope of the operations at Kyshtim had been much enlarged by extensive additions of plant and machinery which was installed in order that all the resources of the estates might be utilized to the full in the production of war material. Considerable capital was required for these purposes, which in great part was provided from the cash resources of the Kyshtim Mining Works, so that the increased returns were by no means due to inordinate profit-taking. The Kyshtim Mining Works took all the steps it could to alleviate the hardships that must befall a civilian population in war time, and that there was little discontent among the 100,000 inhabitants of the estates, the workmen doing their best by their labor to aid their brothers at the Front in defence of the Russian Empire. In 1917 (March) the Revolution, which was to overthrow all that was evil in Russia and to inaugurate an era of happiness and content, took place, and there is little to say of the operations at Kyshtim during 1917. The output of copper showed a decline of nearly 1,400 tons, but despite the state of disorganization in the district, the excellent geological staff persisted in its investigations and actually in the year of the Revolution completed their work, demonstrating the existence of a definite tonnage of ore in the newly-discovered copper deposits in the northern part of the estates. This new mining district may well prove to be as important as that of the Soymanovsk Valley, in which all the Company's operating copper mines are situated.

It may be said that a line from the Northern Urals to the Volga at Nijni Novgorod formed the eastern boundary of effective Bolshevist influence, and it is evident that great efforts were made to instil extremist principles in the industrial districts having Ekaterinburg as a centre. These efforts were not without success in poisoning the minds of some of the younger workmen and office employees at Kyshtim, but there is evidence to show that the older workmen were not in sympathy with the loud denunciations of the mining works, prompted from Bolshevik headquarters, for they knew that the great organization built up since this corporation was formed had brought nothing but prosperity and contentment to the population. There was not, however, sufficient power of resistance to prevent a decree which purported to nationalize the Kyshtim Mining Works. This decree was issued in December, 1917, and put in force in January 1918, when some of the managers were compelled to leave. Under the control of the Workmen's Committee operations of sorts continued until late May, when the surprising success of the Czecho-Slovak adventure brought their forces into the neighbourhood. In the first days of June the Czecho-Slovaks routed the Bolshevists a few miles from Kyshtim, and as a result the property was evacuated by the Red Guard and occupied by the Allies, and has been free from Bolshevist domination ever since. The first object of the Provisional Anti-Bolshevik Government which was then formed was to find employment for the local population, and the authorities of the Government, therefore, again started operations, the works being undamaged. Government control was, however, in this case, on very different lines. One of the general managers of the Kyshtim Mining Works was put in charge, and he was informed that as soon as a duly authorized representative could attend the property would be handed back to the company.

With regard to the financial position of the Russian company information is somewhat indefinite, but the company is assured by the manager that there are large stocks of copper—over 3,000 tons—together with gold and silver, lying at the works, and besides this the credit balance at the banks is between three and four million roubles. The Siberian Government has recognized its liability for damages and financial expropriation or loss caused by the Bolshevik régime, and when the proper time comes a claim will be preferred by the company for restitution of materials and funds expropriated by the Bolsheviks. In the meantime any funds required for the starting of the operations of the different departments have been supplied by the Siberian Government. Let us now briefly consider the various activities of the Kyshtim Mining Works. Chief, of course, is the copper business, with its mines, smelters, and refineries, capable as a whole of turning out from 12,000 to 15,000 tons of copper a year, with the associated gold and silver values amounting to over £20 sterling per ton of copper. The iron business was in normal times only a secondary industry on the estates, but under present conditions has become not only an important contributor to the general revenue of the undertaking, but is assisting in supplying the immediate needs of the population of Siberia and the Urals. In order to meet the war requirements of the Russian Government, and at their request, certain standard chemical industries were established, for which Kyshtim, with its natural resources of basic materials, was peculiarly well placed. These included a sulphuric acid plant of 8,000 tons capacity per annum, a dynamite plate of 1,200 tons with its accessory nitric acid works, and a plant for the production of 4,000 tons a year of sulphate of copper. While these different works were originally intended for war purposes, they were designed and built with a view to their exploitation after the war, and represent to-day sound business undertakings capable of considerable extension. The greater part of the cost of these new and important branches, entailing a large capital outlay, has been defrayed out of revenue.

Besides these developed features of the business further bodies of copper ore have been proved by surface work and drilling, and there is a long stretch of the mineralized belt as yet unprospected, but concerning which the geologists speak with confidence. These point to an indefinite continuation of the copper business beyond the life assured by the reserves in the operating mines. There is also the nickel. The 200,000 tons of ore carrying 2 per cent. nickel, which the engineers regard as assured, represents only a fraction of what is to be expected as the area of untested ground on which the indications are identical is of great extent.

The Tanalyk Copper and Gold Mines

The Tanalyk Corporation, Ltd., which holds the entire share capital of the South Urals Mining and Smelting Co., a Russian company operating copper and gold mines, in the Southern Urals, was also seriously affected by the Bolsheviks, but notwithstanding the disorganization and anarchy which existed, the gold mines produced 7,770-oz. of gold and 5,000-oz. of silver, in addition to which the copper mines produced during 1917, 700 tons of copper, containing 14,000-oz. of gold and 140,000-oz. of silver. This corporation has an arrangement with the Kyshtim Mining Works for the custom refining of copper and the extraction of the precious metals. The latest information received from the directors of the Russian company, and confirmed by the manager of the Kyshtim Company was that the South Urals Mining and Smelting Company had 19,775-oz. of gold and 113,000-oz. of silver deposited at the bank at Ekaterinburg in the Urals. Considerable quantities of copper, gold, and silver in process of refinement at Kyshtim and certain stocks of unsold copper, which we are reliably informed were not expropriated by the Bolsheviks when they were in control in the North Urals, still remain at the disposal of the Russian company when matters are all adjusted.

Mr. Urquhart, Chairman of the Company recently pointed out that it is difficult to estimate what the value of these stocks comes to, as they had no exact figures except with reference to the gold and silver deposits at the bank. These alone, however, come to over £100,000, and it is very probable that the remaining stocks at the refinery will add another 50 per cent. to this total. Besides the values just mentioned they succeeded in withdrawing over one million roubles out of the cash balances at the banks in Petrograd a few days before these were nationalized or expropriated by the Bolsheviks, and this money was now fortunately secreted in a place of safety.

At the meeting in 1917 shareholders were informed that sulphide ore had been cut on the second level of the Tuba mine, and that development on this had shown a length of 175-ft. over 8-ft. wide, assaying 17 per cent. copper and one-fifth of an ounce gold per ton. This development has continued favorable, the last report showing a length on the 210-ft. level of 320-ft., with an average width of 12.3-ft. carrying 19.4 per cent. copper, one-fifth of an ounce in gold and 2-oz. silver. The proved reserves at this mine are now estimated at 32.000 tons of oxidized ore, averaging 1 per cent. copper, 3.3-oz. gold and 26-oz. silver, and 44,000 tons of sulphide ore averaging 14.7 per cent. copper, 0.17-oz. gold, and 1.5-oz. silver. At the Sebaeva sulphide copper mine the ore reserves were stated in Mr. Gilman Brown's report last year at June 1, 1917, as 450,000 tons, with an average content of 2.2 per cent. copper, 0.6-oz. gold, and 1-oz. silver, the proved length of the ore-body being 700-ft. and the depth 151-ft. Developments at Sebaeva have since then continued favorable; the proved over-all length, according to the last reports, had increased to 970-ft., with a depth of 151-ft., so that in the case of Sebaeva there have been added roughly 40 per cent. to the proved ore reserves, bringing them up on this basis to a total of 630,000 tons. This does not eliminate the probability of considerable further extensions in length and in depth.

The Company tackled during 1916-1917 the question of fuel supply, on which depends the further increase of metals production. They had then surveyed and started the earthwork and grading of a light railway, 40 miles long, to their forest concession. A large part of the earthwork, grading and bridges was finished and the rails delivered. The cost of the railway, which was estimated at Rs. 700,000, is being defrayed entirely out of revenue. The completion of the railway will leave very little to be done for the full equipment of the property as a self contained going concern. The question of transportation of fuel, which has always limited and hampered operations, will make it possible to deal with the large resources of copper, gold, and silver in a more economical and profitable manner and on a larger scale than was possible heretofore.

How the Bolshevists were Resisted

It may be asked, said Mr. Urquhart, how is it that through all the terrible dislocation of the past eighteen months—a society overthrown, a Government scrapped, the towns of European Russia given over to famine, brigandage, and anarchy—how is it that the property remained in possession of the rightful owners and management, and that it was possible, even on a reduced scale, to continue working? Briefly, the properties are 1,500 miles away from the centres of anarchy, Petrograd and Moscow, in a district where food is produced and is abundant, and in the country of the Bashkirs and Orenburg Cossacks, who are a stable element, as they are possessors of the lands on which they have their homes, and, therefore, supported each other against Bolshevik aggression. The Tanalyk properties are held on a 76 years' lease on a royalty basis from the Bashkir Mussulman communities of the province of Orenburg. Being far away from industrial centres, they lived a hard existence, and only on the advent of our enterprise at Tanalyk did they feel for the first time some material prosperity. The mining and smelting operations of the South Urals Company gave them good wages, and they were not obliged to go hundreds of miles from home in search of work. Besides giving employment, the Bashkirs were in a sense partners in the enterprise, as the royalty the Russian company pays brings in a comfortable income to the communities, which went not only towards the payment of taxes, but could be used for the more pressing communal needs. As possessors of the soil, their material prosperity was, therefore, bound up with the fortunes of the enterprise, and every Bashkir who wants to remain at home has a personal concern in its continued operations. They had also sense enough to see that it requires brains, technical knowledge, and expert organization successfully to operate a highly complex mining and metallurgical business, and they, therefore, made no senseless effort to ruin it themselves. They were not affected by the mad ideals of the Bolshevists, who were trying to establish the dictatorship of the ignorant and the brainless. Their clanship or patriarchal family life makes them disciplined and ready to respect and recognize that authority that knowledge always brings.

When the Bolshevik Government at Moscow decreed the nationalization or expropriation of all industries in favor of the proletariat, attempts were made by Bolshevik delegates to influence the 200 Russians among the workmen, with the result that the younger and more impulsive elements among these men created some trouble, and the management had to contend with a great deal of disorganization. The Bashkirs refused to deal with the Bolshevik emissaries, and from motives of loyalty, as well as in their own interests, protected the works and employees of the company against mob violence which at times threatened them. In March. 1918, thanks to the support and protection of the Bashkirs, the properties were gradually cleared of extremists. The position to-day is still more secure, as some months ago representatives of the temporary Government of the Bashkir community lands centred at Orenburg took up their residence at Tanalyk, and their attitude towards the manager, Mr. Sabunin, and the staff has been in every sense helpful, friendly, and correct. While conditions at the property have been for some time past such as to permit of working practically all departments, the economic chaos in European Russia must continue to affect the question of vital supplies, such as quicksilver and cyanide for the gold mills, coke for the copper smelters and other materials, either unobtainable at present or, if to be had, only in very limited amounts at very high prices. Until conditions become normal again in European Russia, and while the Bolsheviks continue to fight the Siberian Government on the Volga front, the major part of these supplies have to be transported from England by the roundabout route to Vladivostok, some 14,000 miles by sea and some 4,000 miles by rail, instead of some 3,000 miles by direct route as previously.

Under these conditions we consider it is the safest policy to concentrate on construction of the railway, in preparation of wood fuel and timber at the forest concession, and generally to prepare for the resumption of operations in all departments on a larger scale than heretofore in the near future so soon as general conditions make it advisable to do so.

The Tuba gold mine and mill are being operated on a reduced scale, the production of some 700 to 800-oz. of gold per month being ample to pay for all running expenses and to pay for the 650 men employed on all work in hand. We have sufficient essential stocks in hand to feel sure that we can continue on this basis for a year or more if necessary. The Russian company has gold and silver deposits at the bank, which can be looked upon as cash resources, valued at £100,000, and another £50,000 at least at the Kyshtim refinery, making a total of £150,000 liquid cash assets, apart from large values locked up in stocks of copper and the accompanying precious metals, a considerable working capital in stocks of essential materials and fuel at the mines, over one million roubles cash in safe keeping in the custody of the Russian directors and we have further increased the value of the property by paying the greater part of the cost—namely, 700,000 roubles—of the railway out of working expenses.

The figures of development of further ore reserves, may not look perhaps important, but to give some idea of what this increase in our proved ore reserves signifies, a rough estimate indicates a recoverable value, taking copper at £100 per ton, gold and silver at standard rates, of over £1,000,000, against which working costs have to be charged. We have always in the past been limited in our output of metals by difficulties of transporting fuel from our forest concession. With the construction of the railway, this difficulty will be overcome, and there is no reason why the capacity of the plant should not be at least doubled and the profits from the enterprise consequently very largely increased on a greater ratio than the increase in the capacity of the plant.

Chinese as Executioners

While I do not wish in any way to belittle the numbers or the danger to civilization of the Bolshevik army, I have it on the higher authority that the total does not exceed 700,000 to 800,000 men. The army is kept together with the greatest difficulty and only obtains recruits from among famished men. The private soldiers are paid 500 roubles a month and are given 2 lb. of bread a day, half of which they sell at 25 roubles a lb. Discipline is enforced by terrorism, a company of 100 to 150 Chinamen being attached to each regiment to act as executioners.

Bank of Chosen Enjoys Prosperous Year

The following is a summary of the speech of Mr. Minobe, Governor of the Bank of Chosen, at the General Meeting of Shareholders held in Tokyo, 20th February, 1919.

The half-year under review may be described like the one preceding it, as one of unbroken prosperity in Chosen from beginning to end, every phase of economic activity showing for the most part satisfactory development. Many causes contributed to bring about this state of affairs. In the first place the country had abundant crops and prices ruling for them were very high. Secondly, though the European War came practically to an end with the conclusion of the armistice at the beginning of November, the war-time activity did not cease with it in Chosen. The mines and factories had another prosperous year, and not a few industrial companies were established during the period. The construction of railways, harbours, and other public works progressed favourably, and so contributed to the general prosperity. There were indeed some elements which interfered more or less with this satisfactory progress of affairs, but their influence was too small to affect materially the economic situation in general, which, as we have said, was highly gratifying.

The economic and financial activity in Manchuria was greatly hampered during the period under review by multifarious causes, but the situation taken as a whole was very satisfactory. Especially did business in all lines become active in the wake of the northward advance of the Japanese forces in August. In places like Dairen, Mukden, Changchun, and Harbin the extension of existing enterprises and the establishment of new ones followed each other in rapid succession, and this, together with the progress made in various public works in Fushun, Anshanchan, Lishan, and other places, made the country exceptionally prosperous.

The remarkable expansion of the Bank of Chosen notes in circulation in the country was another feature worthy of mention. Undoubtedly this was due to the growth of the Japanese undertakings there, Manchuria's own development, shortage of silver, and increase in the trade with Japan. Nevertheless the friendly feelings and the ties of economic interest growing ever closer between the two peoples must have played a part in bringing about this auspicious state of affairs. Conditions in Tientsin, Tsinanfu, Tsingtao, and Shanghai, all in North China, were also satisfactory. The development of various industries, perfection of transportation facilities, influx of foreign capital, and the progress in domestic and foreign trade were transforming these places, and the business of the Bank conducted there by its branches progressed most favourably.

During the half-year under review, two branches were established and two closed. Those established were one in Tientstin, and the other in Tsinanfu, both of which places are not only important economic centres in North China, but have close trade relationship with Japan, Chosen, and Manchuria. The offices closed were one in Masan and the other in Shinwiju (both in Chosen). They were closed, since the recent establishment of the Chosen Industrial Bank, to which the business of these offices was transferred, made it unnecessary for the Bank to have branches in those small towns. When the northward advance of the Japanese troops began in August last, the Bank was ordered to follow in their wake and engage in the exchange of military notes and other financial business. At first a number of official were despatched to follow the troops, but as they went along it was deemed necessary to have offices. Thus it came about that offices were established in Tsitsihar, Manchuria (town), Chita, Habarovsk, Blagovestchensk, and Spaskoe.

Deposits at the end of the half-year under review stood at Yen 218,960,000 Advances, standing at Yen 259,130,000, showed an expansion of Yen 104,660,000 as compared with the figures for the preceding half-year. Exchanges sold and bought amounted during the half-year to Yen 25,732,000 and Yen 80,739,000 respectively. The highest amount of note-issue was Yen 115,523,000 on the 31st of December, and the lowest Yen 60,755,000 on the 11th of July, making the average month-end note-issue Yen 81,923,000. When the above-mentioned Yen 115,523,000 at the close of the half-year is compared with the amount at the close of the preceding half-year, an increase of Yen 53,000,000, is seen, and, when compared with that of a year ago, Yen 48,158,000. This rather extraordinary expansion was caused partly by the larger volume of transactions which the economic activities and general rise in prices necessarily involved, and partly by the extension of its sphere of circulation in Manchuria and its influx into North China and Eastern Siberia. Such being the case, the note-issue beyond the legal limit amounted to as much as Yen 17,602,000 at the end of the half-year. Besides, the issue of the Bank's currency bills in Manchuria reached Yen 1,080,000, showing an increase of Yen 270,000 as compared with the figures at the end of the preceding half-year

The result of the business for the half-year under review was highly satisfactory, the net profit being Yen 1,660,674.89, exceeding that for the preceding half-year by Yen 402,989.07, enabling the Bank to make a payment to the Government as prescribed by the law, and also to declare an increase in dividend.

The profits of the Bank, after deducting expenses, providing for interest on deposits, rebate on bills, and for all bad and doubtful debts, amount to Yen 1,660,674.89, to which has to be added the balance from the previous half-year, Yen 353,653.20, and the premium on new shares, Yen 1,347,810 00, making a total of Yen 3,362,138.09, which it is proposed to appropriate as follows:—

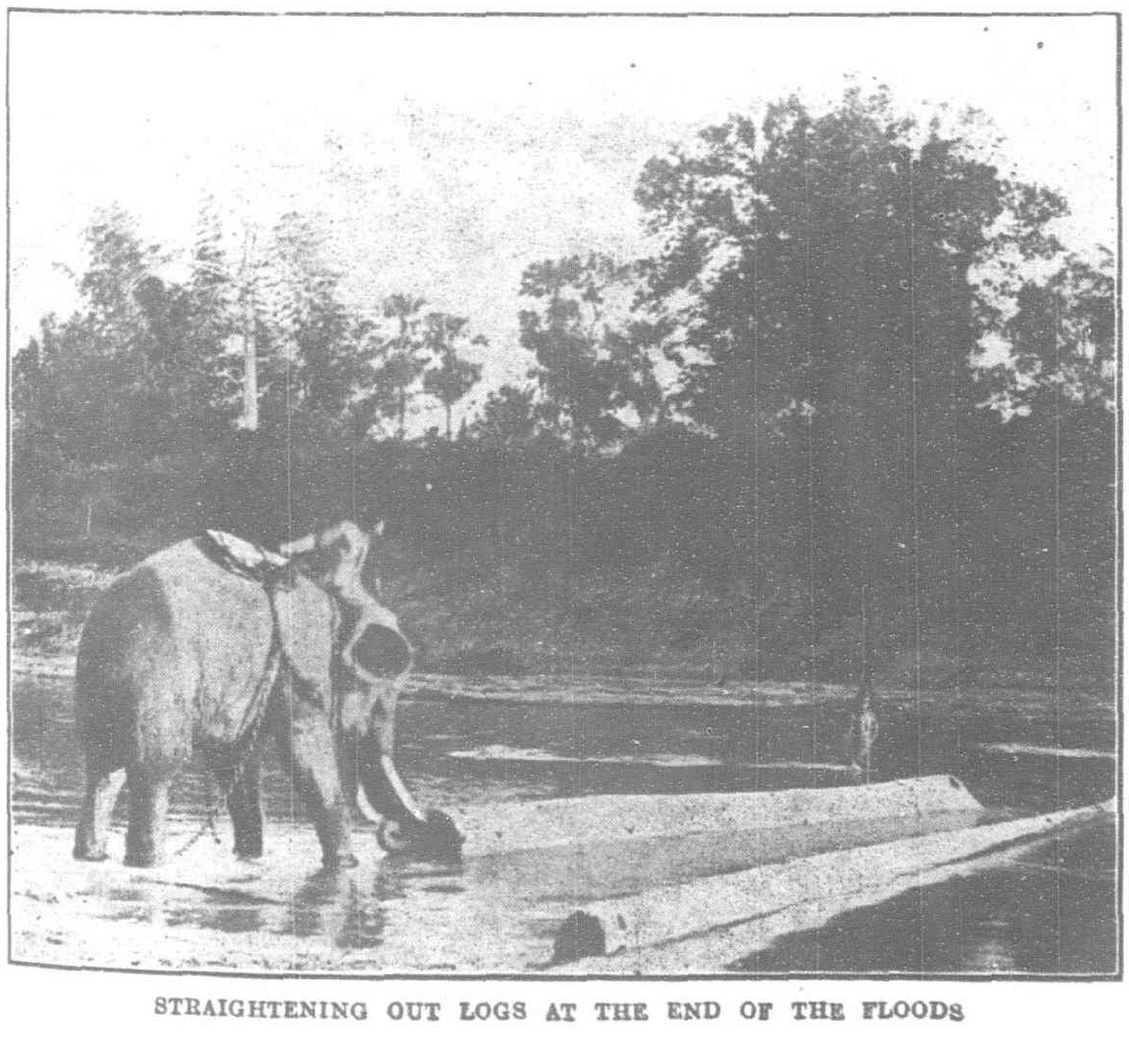
	Yen
Dividend at 6 per cent. per annum on old shares...	600,000.00
Dividend at 6 per cent. per annum on new shares...	52,602.74
Additional Dividend at 3 per cent. per annum on old shares	300,000.00
Additional Dividend at 3 per cent. per annum on new shares	26,301.36
Reserve Fund to provide for losses	1,850,000.00
Reserve Fund to equalize dividend	35,000.00
Bonus and allowances	85,000.00
Payment to Government	52,200.96
Balance carried forward to next half-year	361,033.03
	Yen 3,362,138.09

Teak Getting in Siam

ELEPHANT ROLLING LOG OFF TRUCKS INTO THE ME NAM RIVER

RECENT activity in shipbuilding has brought into prominence the Asiatic hardwood known as teak. Teak has always been considered the wood par excellence in the construction of ships and may justly be called the most valuable of all known timbers. At Lloyd's it is placed in a class by itself, and is recognized as the only wood that it is safe to insure for sixteen years for timbering and outside planking of vessels. Teakwood contains an aromatic oil which gives it a peculiarly pleasant smell and an oily surface when fresh cut. To this fact is attributed its long life and its value as a shipbuilding material, for the oil in the wood prevents its decay and guards against the rusting of nails and bolts used with it in the building of ships, wharves or other structure whose life is generally under water. For use in tropical countries teak has no equal. It can withstand climatic conditions under which other woods would perish, while it is proof against the ravages of the white ant. In addition to shipbuilding, teak is used principally in fine cabinet work such as the inside trimming of Pullman sleeping cars, and, in Asiatic countries, in the manufacture of fine household furniture.

Teak is a native of the two Indian peninsulas and is also found in the Philippine Islands, Java, and other islands in the Malay Archipelago. It requires a tropical climate, the most important forests being found on low hills in the moister districts, thriving best with a mean annual rainfall of fifteen inches. In its youth the tree grows with extreme rapidity. Two year old seedlings on good soil attain a height of from five to ten feet, and instances of more rapid growth are not uncommon. In teak plantations trees obtain an average height of sixty feet in fifteen years, with a girth, breast high, of nineteen inches. In the natural forests, teak, with a diameter of twenty-four inches (seventy-two inch girth), is never less than 100 and often more than 200 years old. The trees are not generally more than 100 to 150 feet high.



STRAIGHTENING OUT LOGS AT THE END OF THE FLOODS

This wood is so useful in the construction of ships that deck margins and rails made of it are so common as to be considered almost a necessity, and the amount of it entering the woodwork of steel vessels is generally limited by the owner's ability or willingness to pay the cost. Its value on foreign markets has risen enormously during the war because of the great demand and limited shipping facilities. An increased demand for the timber cannot be met suddenly for the reason that most of it reaches the market through being floated to a seaport, and when handled this way must be girdled and seasoned for two years. Shipbuilding centres being a long distance from Bangkok, the principal port of supply, there are heavy freight and handling charges added to the original cost of the timber, before it is put to use. It is shipped to the market in the form of a large square, in which form it is purchased by the shipbuilder for sawing into the desired sizes.

An idea of the value of teakwood abroad may be gained from its market price in the United States, which was about $230 per 1,000 board feet before the War, and during War times rose to 50 cents per board foot or more according to the state of supply. The normal consumption of teak in the United States amounts to about a million feet per year.

The best teak is found in the forests of Northern Siam and Upper Burma. There is still a small quantity in the forests of India, and the plantations in Java also contain a limited supply, but in these countries the trees are not large and the wood of rather poor quality. In Siam the work of extracting the timber from the forests, bringing it down to the coast, milling it, and shipping it, is mainly in the hands of four British Companies,[*] although one Danish Company[†] has now fairly large interests. All these firms work their logs down the various tributaries to the great river, Me Nam Chao Phya, which flows into the Gulf of Siam. Saw mills fitted with the latest machinery have been erected at Bangkok, the capital of Siam, which is situated near the mouth of this river. There is also a French company which has a concession to work some forests in the extreme north of Siam. This Company works its logs out to the Kawng (river) and floats them down through French Indo-China to Saigon, where there is a sawmill. The French company, however, has had considerable difficulties to contend with, principally in getting its timber through the great Kawng rapids, which are about 50 miles in length, and has, so far, only worked on a small scale.

ANGLO-SIAM CORPORATION'S LIGHT RAILWAY

Concessions to extract the timber from the forests are obtained from the Siamese Government, a fixed royalty being paid on every log which is floated past the Government station at the junction of the main rivers at Paknampoh. All logs are measured at this place and duty paid on a sliding scale according to the length and circumference of the logs. The concessions are usually given for 30 years, the forests being spilt up into two areas, one to be worked as evenly as possible for 15 years and then closed, and the other area worked for the remaining 15 years.

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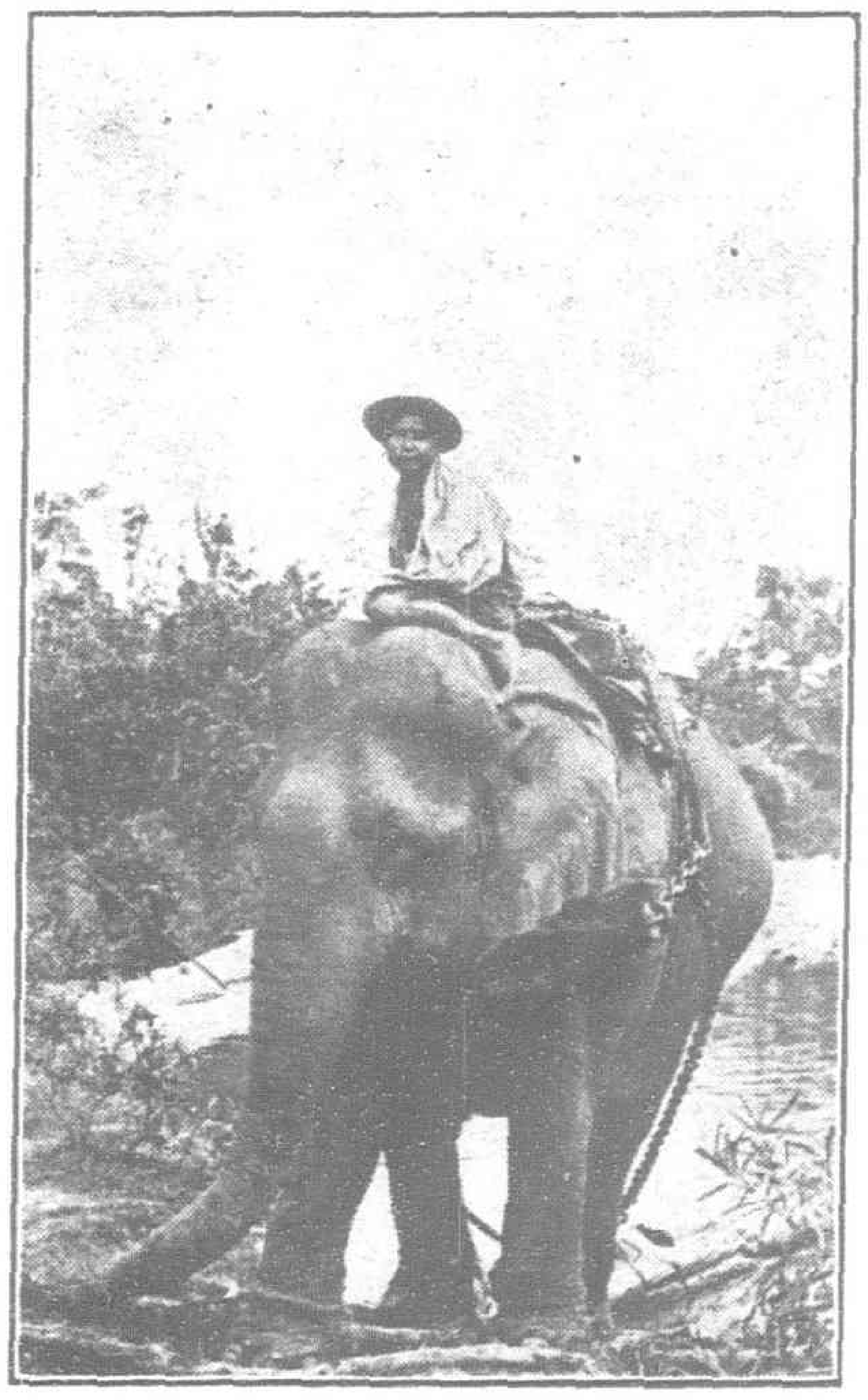
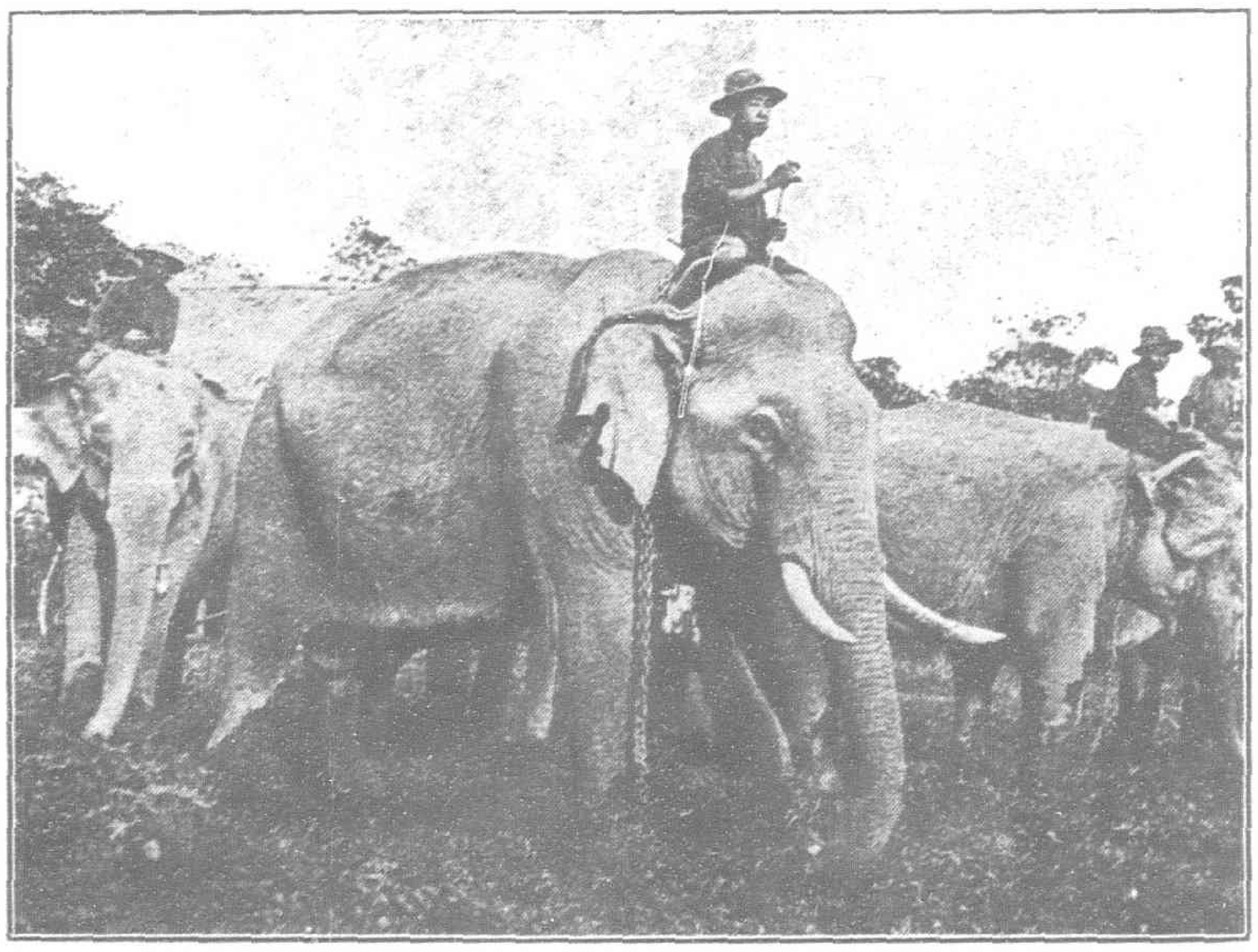
[*] The Bombay Burmah Trading Corporation. Anglo Siam Corporation. The Borneo Company. L.T. Leonowens, Ltd.

[†] The East Asiatic Co., Ltd.



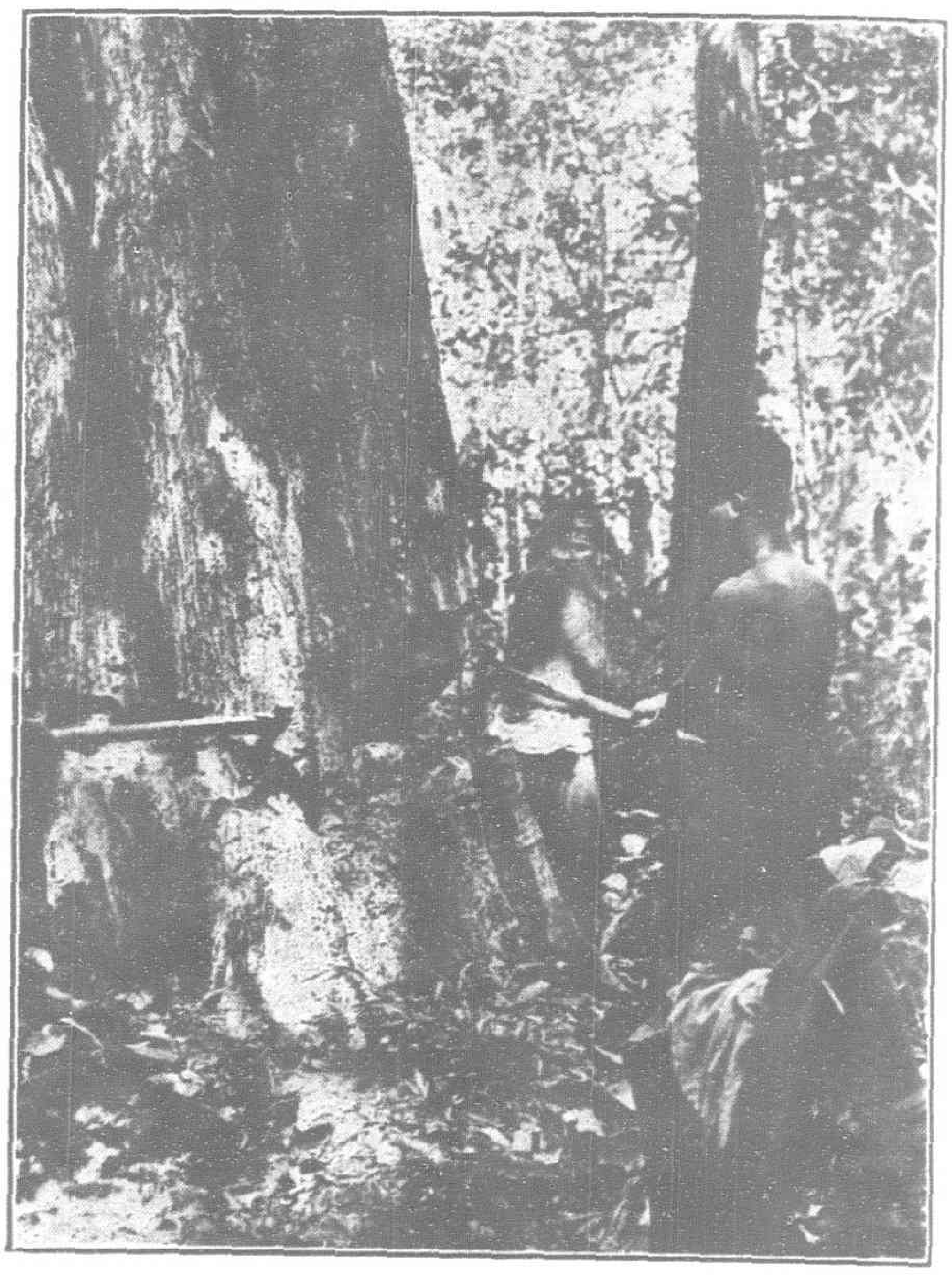
FEMALE ELEPHANT CLEARING A BLOCK IN THE RIVER

The teak trees are found growing in patches over the greater part of the vast mixed forests of Northern Siam, and the first thing that has to be done, when a concession has been obtained to extract the teak from certain forests, is systematically to search the whole of the first area to be worked and girdle all trees over a certain girth that it is considered will produce marketable logs. This work is at present done by the representatives of the various companies but is under the control of the Royal Siamese Forest Department. No tree under 6-ft. 4½-in. in circumference at 4-ft. 6in. from the base is allowed to be girdled and there are various regulations to be observed which ensure the proper regeneration of the forests. The trees are girdled in order to kill them, axemen cutting a ring through the outer sap wood right round the tree and as near the ground as possible. The sap being unable to rise, the tree dies above the ring. No tree is allowed to be felled until at least two years after it has been killed by girdling, the reason being that the only means of getting the timber down to the coast, possibly some 500 miles or more away, is by floating it down the rivers, and the teak logs will not float until the wood is thoroughly dry. As soon as the whole area is girdled over and the stocks available ascertained, plans for working the area evenly over the 15 years can be made out. In the ordinary way, contracts are given to elephant owners, chiefly British Shans or Burmese, to work small areas, the rates paid varying according to the distance and the difficulties of extraction and being reckoned on the measurement of the logs. These men contract to fell all trees in a given area and drag all the logs to the nearest stream which has rises big enough to float them properly. The labor used in the actual forest work is mostly composed of Kamoos, hillmen from French Indo-China, who come across the border in small gangs and sign on for two years. This labor, however, is becoming scarce and the number of Laos, the natives of Northern Siam, employed is increasing every year. These men are all good axemen and the trees are usually felled with axes, though felling by saws is being introduced where necessary.

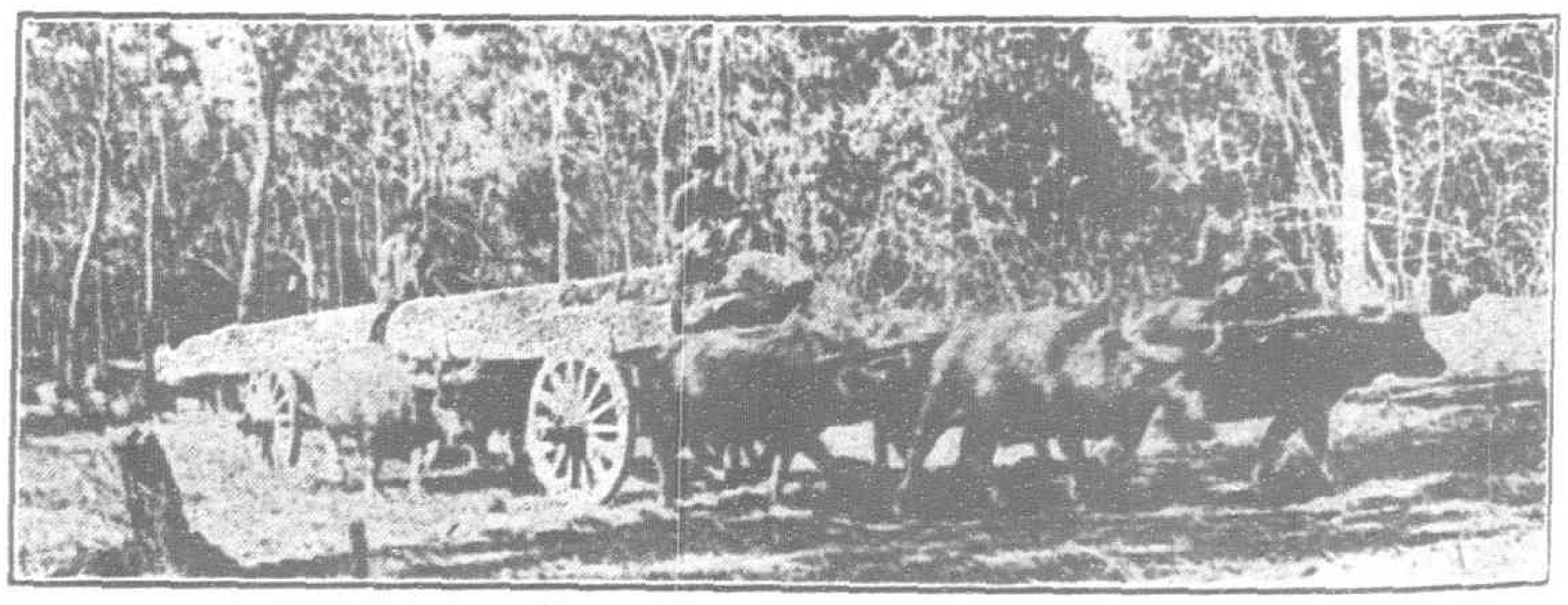


A FINE WORKING TUSKER

Teak is usually found in hilly country and, when the trees have been felled and the logs cut and trimmed, elephants are used to drag them away from the stumps. When the hills are steep and rocky, as they so often are, this work is very difficult. If the country is very rough, elephants drag the logs all the way to the nearest floating stream, but, usually, they only transport the timber to the foot of the hills and the logs are then carted over roughly made roads, buffaloes and bullocks being used for hauling. All this work is regularly inspected by representatives of the company concerned. The logs are laid out and measured on the banks of the stream, and, after being measured, are rolled into the stream by elephants and laid out ready to go away on the next rise of the waters during the rainy season. All the companies are large elephant owners and work out some areas themselves. Elephant camps are maintained in all the streams on which logs are being floated down, and these elephants are used to straighten out all stacks that may have formed after each rise and also to drag back to the bed of the stream any logs that may have been stranded on sand banks, etc. Thus the logs are floated down to Southern Siam.



GIRDLING A TEAK TREE



TEAK LOG DRAWN BY WATER BUFFALOES

Until some three or four years ago, it was not considered possible profitably to extract the timber from some large forests in the extreme North as all the rivers in these forests run North to join the Me Kawng in French Indo-China instead of South to Bangkok. However, one British firm, the Anglo-Siam Corporation, Limited, has constructed a light railway through these forests and over the boundary range to the Me Yome, a river running South, and timber is now being worked satisfactorily. As the point where the work was started is over 100 miles from the nearest point on the Siamese State Railway, and there was only a very rough jungle track connecting, it can be imagined that there were very considerable difficulties to be got over in constructing this railroad. A rough cart road was made up from the Government Railway and all the material carted up by means of bullocks and buffaloes, the locomotives being taken to pieces at railhead and built up again in the forests.

At various points on the main rivers in Southern Siam, below all the rapids, rafting stations are maintained by the companies and contracts are given to villagers to make up rafts and take them down to Pakret, just above Bangkok. Logs take about four years on an average from the time they are measured on the banks of floating streams until their arrival at Pakret. At the rafting stations, villagers swim out to the logs as they come down on the floods and paddle them in to the banks, making them up into rafts of about 175 logs each. These rafts are sent down to the royalty and duty stations and then on to Pakret on the falling waters, it being impossible to control them on the full force of the flood water. From Pakret the logs are taken down to the mills in Bangkok as required, though it is not advisable to keep the logs any great time in Bangkok water owing to the damage that may be done by the "teredo" worm.

Japanese Mineral Production

[BY TRADE COMMISSIONER J. MORGAN CLEMENTS.]

Statistics of the production of the most important metallic and nonmetallic minerals of Japan proper were obtained from the monthly reports of the Japanese Bureau of Mines. The figures were compiled by an officer of the Association of Mine Owners (Kozan Konwakwai) and were later checked in the statistical department of one of the large metal-producing and selling companies of Japan.

The following table shows, in long tons, the Japanese output of the principal minerals during the year 1917 and the first six months of 1918:—

Minerals.	1917	January-Juns, 1918.
METALS.		
Antimony :	Tons.	Tons.
Refined	6,562	(*a*)
Crude	10	(*a*)
Chromic iron ore	8,798	1,173
Copper	63,812	41,787
Gold :		
Lode	*b*226,122	*b*122,632
Placer	*b*1,402	(*a*)
Lead	15,557	2,419
Manganese ore	50,552	12,219
Molybdenum	12	(*a*)
Platinum, placer	*b*132	(*a*)
Quicksilver	2	1
Silver	*b*7,111,720	*b*3,166,344
Tin	209	87
Tungsten	721	291
Zinc (metal)	53,852	(*a*)
NONMETALS.		
Asphalt	3,811	1,414
Coal :		
Bituminous	25,939,637	13,999,517
Limite	150,450	76,023
Graphite	1,308	538
Petroleum, crude	*c*2,850,159	*c*1,220,968
Phosphate rock	119,682	112,519
Pyrites, iron	119,426	(*a*)
Sulphur	116,120	34,963

a Figures unobtainable. *b* Troy ounces. *c* Barrels of 42 gallons.

In 1917 the Japanese production of antimony decreased about 30 per cent. Large quantities of crude antimony are imported into Japan from China and refined, most of it is then exported to London and New York. This can only be done profitably when the price of crude antimony in China is low enough to enable Japan to import, refine, and sell it at a profit in those markets, and consequently the output of Japanese refined antimony fluctuates largely according to the prices of crude antimony in China and of the refined metal in London and New York. No figures are available for 1918. However, as there were no very marked fluctuations in the antimony market during this period it is probably safe to assume that the 1918 production will be about the same as that of 1917.

The production of chromic iron ore (chromite) reported for the first half of 1918 indicates a 75 per cent. reduction in the 1918 output, compared with that of 1917. This great reduction is doubtless due wholly to the embargo on imports into the United States. No statistics whatever of the production of iron ore, pig iron, or steel in Japan for 1917 and 1918 were obtainable.

The 1917 figures for copper are not reconcilable with known facts and are probably those for mines having their own smelters and do not include the production from custom smelters. It is suggested by the company which checked the figures that they should be corrected to about 152,000,000 kin (89,756 long tons). It is evident that the production greatly decreased in 1917, largely as the result of the loss of the Russian market; however, a better price was obtained for the metal in that year. The figures for 1918 are doubtful; it appears that the production will be less than that of 1917, but the price ruling in Japan has been higher.

An increase of nearly 30 per cent. is noted in the lead production for 1917 over that of 1916. It is suggested that the figures for the first half of 1918 be corrected to about 4,252 instead of 2,419 long tons. During 1917 large amounts of lead concentrates were imported from Australia, but during the past year the imports have decreased on account of the very high freight rates.

Manganese-ore production shows a small increase in 1917, compared with 1916. On the basis of the reported output for the first half of 1918 the production for the entire year will be decreased about 50 per cent. over 1917. This reduction is chiefly due to the embargo against shipments to the United States and high freight rates.

There was nearly a 50 per cent. increase in the zinc output of 1917 over 1916, but the price decreased markedly. Probable figures of 10,983 long tons are given as the production for the first half of 1918. The decisive decrease indicated by these figures is due to the fact that the large imports of zinc ore from Australia and Tonkin in 1916 and 1917 were greatly reduced on account of the drop in the price of zinc and the rise in freight rates, and to the decrease in the imports of old Chinese copper coins (cash), which were exceptionally, large in 1917, and which yield about 20 per cent. zinc when melted.

The increased output of silver in 1917 in spite of the reduction in the copper output is, of course, due to the increased mining of silver ores, stimulated by increases in the price of the metal.

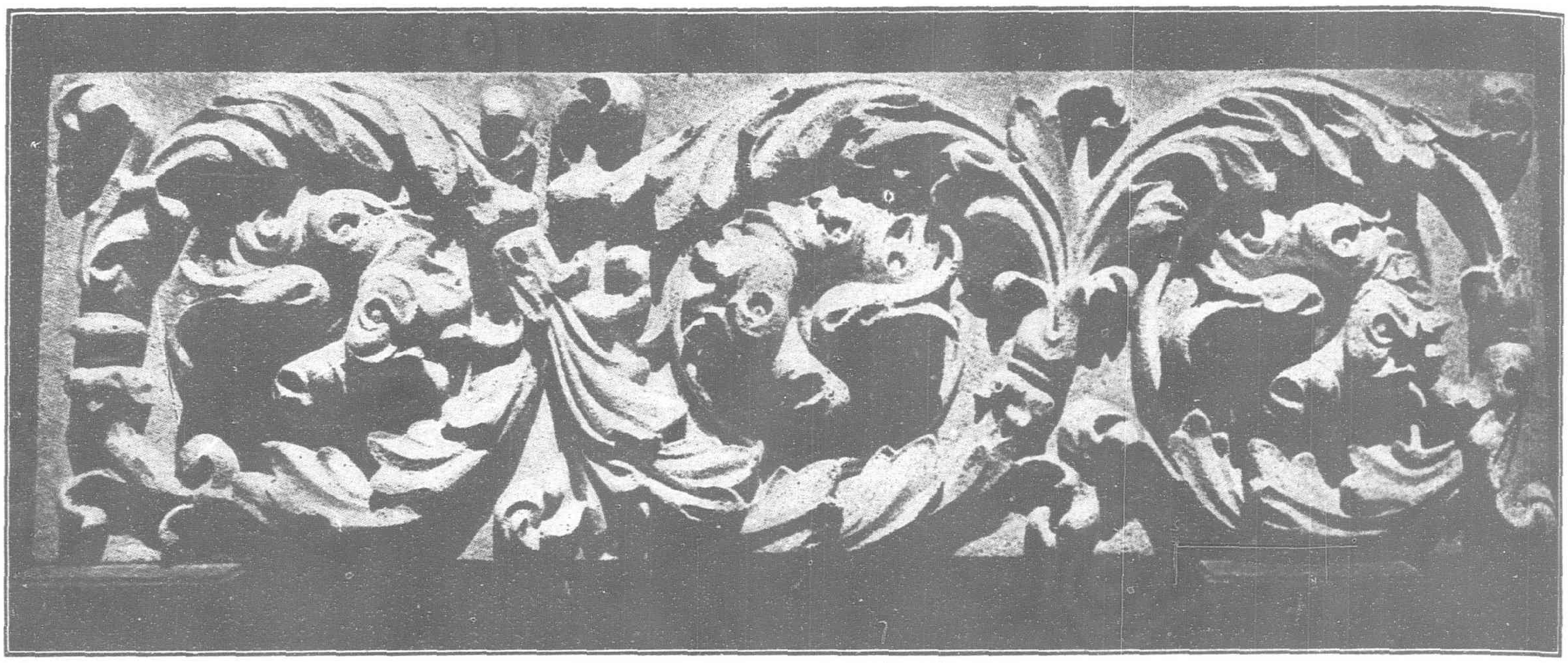
Nearly a 3 per cent. decrease in the output of tungsten ore is indicated by the figures given for 1918. The reason for this is doubtless the decrease in the price and the difficulty of making shipments to the United States.

The output of coal increased about 16 per cent. in 1917 over that of 1916, but the price shows, as is to be expected, a much larger increase. There promises to be a small increase in the 1918 output; the price will also doubtless show an increase as there is a shortage of coal in Japan, and the prices are very high.

Petroleum production for 1918 will probably show a decrease of around 20 per cent., compared with 1917, in spite of the increased demand and high price. This reduction will be due chiefly to the lack of well-drilling supplies, especially casing, which prevents the bringing in of new wells in the oil-producing districts.

The increase of about 75 per cent. in the output of phosphate rock for 1918 is probably due to the growth of the chemical industry and the demand for an increased production of foodstuffs.

Sulphur statistics for 1918 indicate that the production for this year will be about 30 per cent. under that of the previous year. The market for sulphur this year has been quite inactive, having been affected by the high freight rate and the difficulties of exportation, which have caused a reduction in the output.



CORINTHIAN FRIEZE AT NEPOMUCENO'S SHOP

Architecture in the Philippines

By Ralph Harrington Doane, Consulting Architect to the Philippine Government

There can be no true democracy without leadership, and there can be no leadership worth while in democracy that is not in the interest of the people as a whole, those who seek spiritual uplift no less than those who desire only material benefits.

Real democracy must provide for the masses what, until the advent of the nineteenth century was reserved principally for the "upper classes," i.e., not only those things which protect the body, but above all those things which elevate the soul; and of these the fine arts have been, since the dawn of human intelligence, the greatest true and living expression.

A government which fails to recognize the right of the people to enjoy the benefits of the great heritage of art; which fails to cultivate and encourage in its people the love of beauty; and which does not recognize, as one of its legitimate functions, the orderly and systematic development of the fine arts is no true democracy.

The Philippine Government, conscious of these inherent duties, has with respect to the fine art of architecture, established rigid Government supervision. It therefore becomes incumbent upon officials charged with these special responsibilities to carefully analyze past and present architectural accomplishments and procedures and to formulate an architectural policy, which in the future will produce splendid monuments as well as practical buildings, and which will maintain a high architectural standard in public works, commensurate with the dignity of the Philippine Government, and calculated to engage favorable public sentiment and promote a healthy civic pride among the Filipino people.

The fact that there is not, and never has been a characteristically Philippine architecture is not necessarily a reflection upon the genius of the Filipinos. There are many critics who contend, with some degree of justification, that America has no distinct architecture and who accuse American architects of plagiarizing the ancient Greek and Roman, and renaissance architectural forms.

The Greeks and Romans borrowed the principle of the column and lintel from the Egyptians, who first utilized it on an extensive architectural scale, and the Gothic architects borrowed the principle of the arch from the Romans, so it is evident that progress in architecture has not been made by the repudiation of early architectural discoveries, but rather by the development and amplification of them. American architects are no more justified in ignoring in the design of modern buildings the rich lore of ancient and renaissance precedents than the Greeks would have been in repudiating the column and lintel of the Egyptians or than the Gothicests would have been in declining to utilize the principles of the arch given them by the Romans.

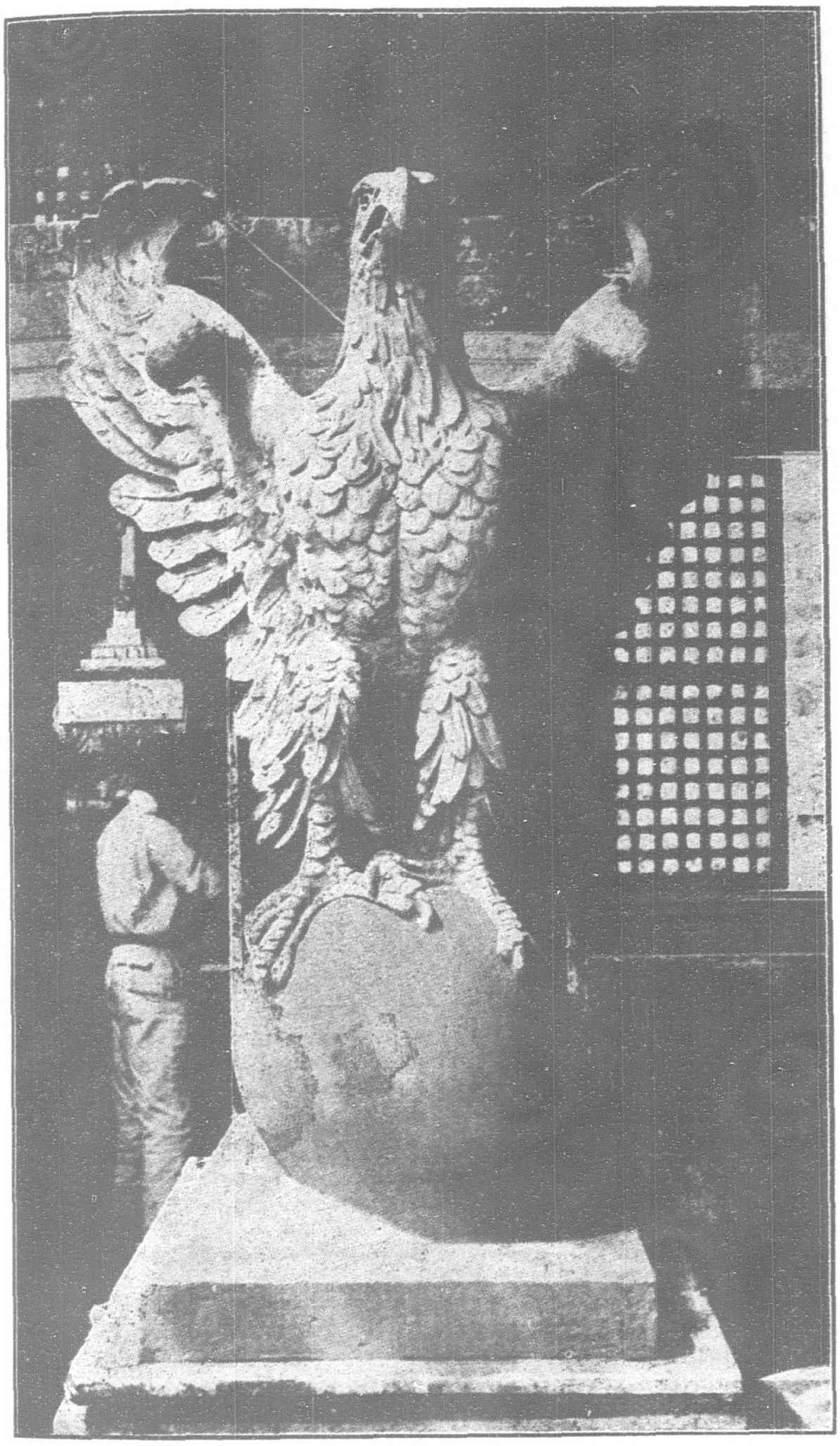
America began its history, as the Philippines began theirs, without any native architecture, but has legitimately followed ancient and renaissance precedents, making such adaptations as were necessary to solve American architectural problems. The Philippines might well proceed on the same policy, utilizing the best in the classic, renaissance, and modern architecture, with the modifications necessary to produce a style eminently suitable to these Islands. There is no more logic in refusing to erect buildings in the Philippines of a distinctly American character than there would be in declining to use electricity because of its American derivation.

The Philippine Islands must go through a long period, in which the adaptation of European and American science shall be accomplished, before the field of original research is reached, and so in architecture, they must proceed far with the adaptation of foreign architectures and methods of construction before a distinctly characteristic Philippine style will appear.

Any distinct style of architecture in the future will be based on a legitimate utilization of exotic architectural motives practically modified to conform to the customs of commercial and private life and to the exigencies of tropical heat and torrential rains. Climate conditions seem to prescribe that such an architecture will be of an open type incorporating exaggerated systems of horizontal overhangs.

Buildings in the tropics may be made cool by two distinct methods: First, by the construction of tremendously thick masonry walls and minimum fenestration, precluding the heat and resulting in dark interiors often damp and unsanitary. Second, by permitting the constant breezes, which make the tropics habitable, to freely circulate throughout the structure, unhampered by impenetrable construction. This second method produces pleasurable habitations and healthful living conditions.

The only architectural monuments in the Philippines, constructed prior to American occupation, are the churches. They are not, however, Filipino in character, but on the contrary typical examples of the so-called Spanish colonial architecture found in almost every Spanish colony. These churches, constructed of soft adobe stone (a conglomerate material), number in the thousand and constitute an herculean architectural achievement of greater magnitude than has been attempted by the Americans. Most of them are hundreds of years old, and, in addition to their relatively large size, present a charm of antiquity which is most impressive. They were designed by Spanish "padres" who, apparently unequipped with any architectural education made an effort, in the absence of drawings and photographs of Spanish and European renaissance buildings, to reproduce from memory the architectural forms which they were accustomed to see in their native land. This procedure has resulted in huge edifices, in general composition roughly modelled after rococo continental ecclesiastical types, decorated with crude and clumsy details of spontaneous and unprecedented character, merely approximating the form of more refined European work. Built of a soft porous material as they are, these edifices have through the decades absorbed enough moisture and vegetable matter to produce considerable surface vegetation, resulting in charming color and picturesqueness quite alleviating their gross proportions and clumsy details.



LINGAYEN EAGLE

Spanish colonial churches are found in all parts of the Philippine Islands. Ecclesiastical projects were, in the days of Spanish Government, constructed in remote districts, of such magnitude as to absorb almost the entire communal wealth. When the Spanish Government was overthrown it is no wonder that reactionaries attempted to destroy many of these edifices, the results of forced labor and oppression. However, to-day personal observation has established the fact that Filipinos now regard these huge architectural monuments with the utmost local pride and appreciation, and it is believed that these impressive ecclesiastical monuments, standing as they so frequently do in the midst of towns built up of nipa huts and modern clap-trap galvanized-iron abortions, have a most potent influence upon the community, and present an impressive example of stability far reaching in its effects upon human life in the vicinity.

At the time of the American occupation, the public works of the Spaniards were totally discredited. Spanish methods of building were without consideration ruthlessly abandoned, and a *régime* of reinforced concrete and galvanized iron inaugurated, which, for decades to come, will irradicably disfigure what once were picturesque Spanish cities and towns. Adobe stone, clay products, native Philippine woods, and other logical building materials at hand were abandoned and the importation from foreign countries of cement, steel and galvanized iron, and even wood was undertaken on a large scale. While reinforced concrete construction was and still is advisable, on account of earthquakes, for the larger and more important projects, there are vast numbers of small Government buildings erected annually in which mass construction and native materials might be used exclusively.

The Philippine Islands are rich in their natural resources of building materials, which, except for a large cement manufacturing plant at Binangonan, Rizal province, are largely undeveloped. In almost all parts of the Islands beautiful lime stones and marbles can be found comparatively near the surface and in large quantities, but in most cases, due to volcanic action they are broken up in pieces too small for building blocks. However, it is known that in certain locations, deeper in the earth, exist suitable quarry sites from which building blocks might be obtained which would equal or surpass in beauty the handsomest of Europe or America. In fact, marble is so prevalent that a kind almost resembling Bottichino, largely imported from Italy to the United States, is crushed and used for road surfacing in the province of Iloilo. While the rich quarries of this Archipelago are so undeveloped at present as to make it impossible to obtain stone ashler veneers for concrete walls, it is hoped in the future that public and private buildings in great numbers may have lime stone and marble exterior.

Clay abounds in almost every municipality, and silica and natural coloring matters are locally available for the manufacture of ceramics, yet this industry has been so neglected that it is necessary to use roofing tiles made of cement imported from Japan, a most uneconomical and illogical procedure.

Stands of superior hardwoods equal and surpassing in beauty the ebony, mahogany, and circassian walnut, so extensively imported in the United States are prevalent, nevertheless the lumber industry is so infantile and congested that lumber of mediocre character can be obtained only with great difficulty for the interior finish of Government buildings and for the construction of furniture and accessories.

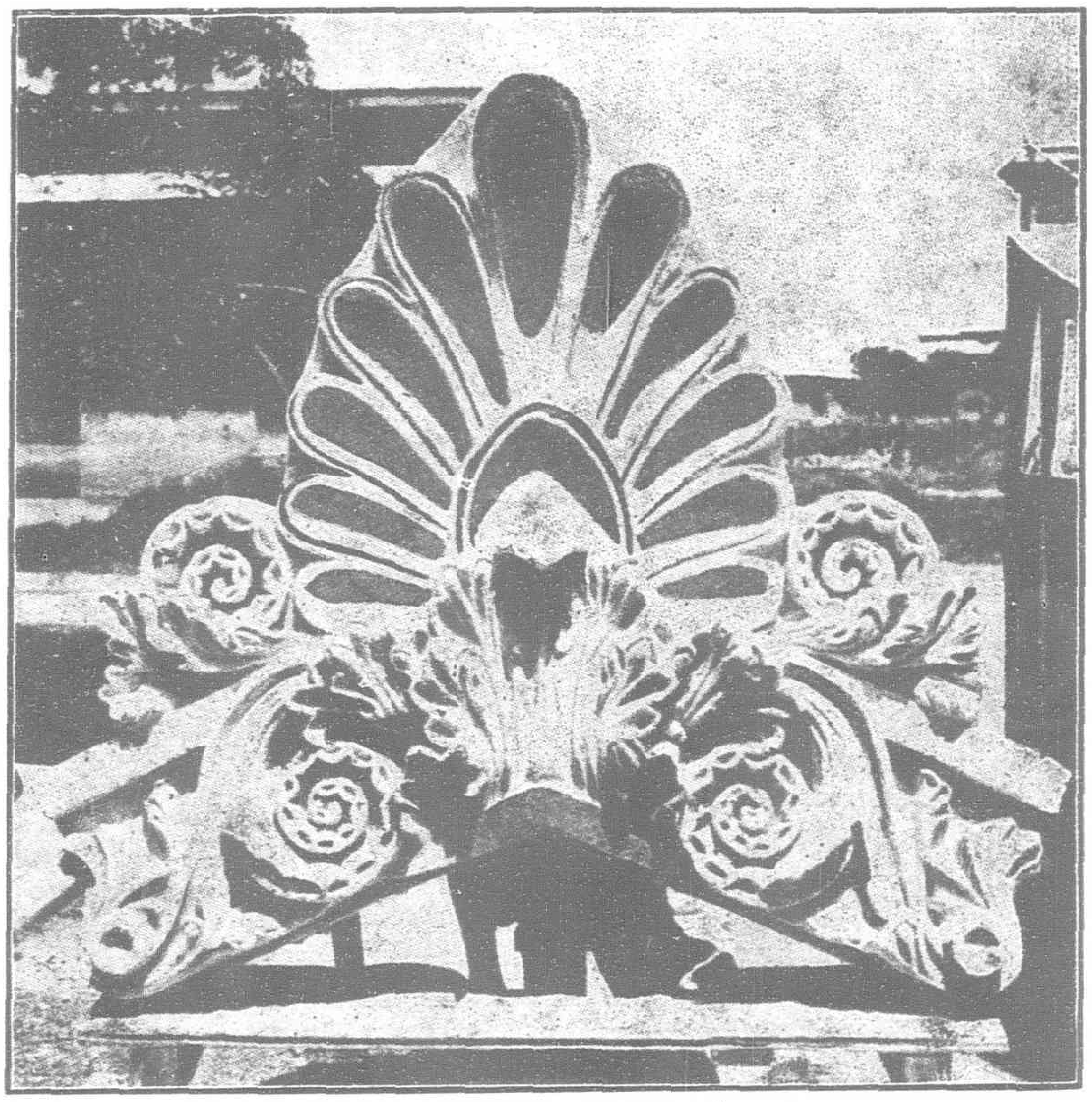
There are bronze workers in Manila, doing remarkably fine work, who, for lack of a proper knowledge of foundry work, are obliged to literally carve their finished products from the roughest and most crude castings. The dissemination of scientific information in regard to bronze foundrying would doubtless give considerable impetus to this splendid craft.

The Spaniards imported marble floor tiles, an impossible procedure just now and an expensive one at any time. While it is impossible to work extensively the marble in the Islands, for lack of facilities, it is possible to manufacture marble mosaics, which should be immediately resorted to as a substitute for the unsightly cement floor tile now so prevalently used.

The Chinese ornamental iron workers in Manila constitute a most interesting industry. Their work is very skilful, but as in the case of bronze work, lacks a certain perfection because of insufficient knowledge of foundrying. With proper scientific assistance, this industry which is already a most prosperous one, might become very formidable, for the quantity of iron grilles and ornamental iron work required in the open type of buildings suitable to the tropics is considerable. The iron work might be expanded to include all sorts of wrought-iron hardware and electric fixtures.

In time past wood carving of a very fine technique was splendidly done in Manila. It is regretted that most of the best artisans in this craft have passed on to their reward without disseminating their cunning. However, this art is undergoing a renaissance, due to the exceptional demand for wood carving in public buildings, for furniture, and for carved wood electric fixtures of rather elaborate character.

The field of plaster and stucco work has never been properly developed in Philippine buildings. Scriffito so profusely used for the decoration of Italian buildings is a most logical and practical type of decoration for the less important architectural projects in these Islands. It may be applied to concrete or brick surfaces or even to metal lath surfaces, and consists of several layers of different colored stuccos, into which is scraped an ornamental pattern or design exposing in an artistic manner the different colored layers used. It is a most economical method of securing a highly decorated architectural effect and it is hoped that scriffito will be resorted to with great frequency in future constructions of a suitable character.



PEDIMENT ACRETERIA, MARTINEZ' SHOP

The Filipino is naturally a most talented craftsman, and under favorable conditions, is capable of developing and maintaining in these islands a perfection of arts and crafts work equal in quality and cunning to that which one has learned to associate with Japan and China, and it is a tragedy that his natural aptitude for artisanship should be obscured in mediocre productions solely for the lack of a proper contact on a large scale with the splendid artisans of other nations.

The Filipino people as a whole are endowed with artistic impulses. Their instinct is to ornament and decorate where ever possible. They are tremendously fond of pageants and festivals and, with a public spirit highly creditable, whole communities will unite in elaborately decorating their houses and their streets for gala occasions.

In general, according to universally accepted standards, typical Filipino artistic attainments are most unsatisfying. They are unsubstantial and in short, amount to little more than tinselled clap trap. The quality of permanency, while a strong element in the great arts of the world, receives little consideration in Filipino art which is absolutely devoid of the element of substantiality.

In the prevalent artistic taste of the Philippines is considered coarse and garish, it is due not to any fundamental deficiency in the people but rather to the influences by which they have been surrounded. In the northern part of the Acrhipelago live tribes of almost naked mountaineers, whose sole art is revealed in the decoration of head axes, spears, and the rude implements of uncivilized existence. In the southern islands, less than a thousand miles distance, live a fierce Mohammedan people, who, aside from a few touches of exotic southern Mediterranean art, are artistically as undeveloped as the northern inhabitants just mentioned. Between these extremes, live the great bulk of the Filipino people, who, prior to the American occupation, knew only their own primitive instincts and the influences of Spain, which in the matter of art were of the most tawdry and superficial character.

This rather severe impeachment, it must be said in all fairness, should not be interpreted to apply to those Filipinos who have had special education or other advantages either at home or abroad, for there are many such who possess real artistic appreciation and ability. Promising young Filipino architects, artists, and sculptors might easily be cited whose attainments will be limited, not so much by their personal capacities as by the influence to which they are subjected in the future.

In the early days, the Americans enforced a bare, severe, undecorated architecture as an antidote for the prevalent garish tastes of the native people. Such a severe architecture, as is only permissible in conjunction with the finest building materials was attempted in concrete, a material which though structurally excellent is artistically bastered, and in no way expresses the native luxuriance of the tropics or the prevalent ease of life in the Far East. This architectural procedure met with local dissatisfaction on every hand. The Filipinos were willing to be shown a new architecture if it could be richly decorated, but were not willing that their public buildings should be devoid of any embellishment whatsoever, little more, in fact than warehouses.

The following considerations have led to the inauguration of a new architectural policy in the Philippine Islands, viz.: Concrete for the exterior of monumental building projects is admitted by the architectural profession to be the least desirable of all masonry materials. Its natural color is gray and lacking in vibrant quality capable of producing pleasurable color sensation. Furthermore, while the natural effect of time upon accepted building stones produces a weathering beneficial to their tone quality, the effect of weathering upon concrete is decidedly detrimental, and results in a more unsightly and depressing aspect than is presented by the newly constructed material.

Since the construction of genuine ashler stone exteriors is impossible at the present time, a synthetic artificial stone has been devised comprising granulated particles of handsome local marbles, previously referred to in this article, mixed with cement in such proportions as to make the marble particles completely preponderant. The surface of this product, being tooled to expose the actual marble aggregate, produces a vibrant color tone by virtue of the exposed particles of marble, and resembles in mass the appearance of white marble or cream warm lime stone, as may be desired, which responds to the gorgeous colorings of tropical sunlight.

It is an acknowledged architectural precept that the softer the material the more it may be decorated. Ornament is produced in terra cotta with the utmost facility, hence, it is considered good taste that terra cotta buildings shall be highly decorated. The synthetic stone above described, for plain wall surfaces, is manufactured at various building sites, but the ornamental parts are manufactured in Manila (in accordance with the policy of producing all architectural and building specialities in Manila for shipment to the provinces) by a special corps of fifty or sixty sculptors and moulders working under the supervision of the consulting architect. Since the manufacture of this synthetic stone is found to be somewhat analogous to the manufacture of terra cotta, it is found possible to obtain without unreasonable expense, an ornamentation of public buildings consistent with the standards of good taste exemplified in classic and renaissance architecture.

Government buildings have already been practically completed under this new policy. They represent a substantial architectural beauty in accordance with best architectural traditions and precedents, as well as a practical solution of tropical climatic conditions. They have inspired the pride and interest of the communities in which they are located and seem to demonstrate that the Filipino people are willing to forego the shoddy gaudiness of Spanish standards for the more substantial and satisfying results of legitimate architecture.

The Philippine Islands are on the threshold of an architectural era of great importance in their history. Never before has there been so prevalent a desire for monumental and imposing public buildings. The coffers of the Government Treasury are well filled and prosperity is evident on every hand. Entirely aside from a very considerable amount of standard schoolhouse and market construction, the Government architectural division is engaged on the following *bonâ fide* projects either actually under way, or for which appropriations have definitely been made, a conservative cost estimate of which is ten million pesos, or five million dollars, gold, viz.:

1.	The Insular Government Building	Manila.
2.	The Jones Bridge	Manila.
3.	Post-office	Manila.
4.	Malacañang Executive Building	Manila.
5.	Alterations of the Malacañang Palace...	Manila.
6.	General Hospital Dormitory	Manila.
7.	High schools	Manila.
8.	Insane and contagious disease wards, San Lazaro...	Manila.
9.	Trade school	Manila.
10.	Pierhead houses and water-front construction	Manila.
11.	Provincial Capitol	Pangasinan.
12.	Provincial Capitol	Leyte.
13.	Provincial Capitol	Ilocos Norte.
14.	Contagious disease hospital	Zamboanga, Mindanao.
15.	Normal School	Zamboanga, Mindanao.
16.	Presidencia	Burauen, Leyte.

Such a tremendous volume of architectural work demands and deserves a very efficient and high-class architectural organization. The consulting architects's office at the present time has fifty-three employees, all of whom are engaged in office work, inasmuch as district engineers in the various provinces perform the necessary structural inspections in connection with building projects.

Filipinos are naturally most expert draftsmen. The ability to draw is remarkably prevalent among the Filipino people and the standard of draftsmanship in the Government architect's office is not surpassed by that of any architectural organization elsewhere. It is regretted that there are not a sufficient number of educated Filipino architectural designers available to produce the architectural designs required for public works. Only five Filipino architects have been educated in America and at the present time there are no Filipino students abroad pursuing architectural studies. Unless immediate steps are taken to interest young men in this profession, and unless immediate steps are taken by the Government to educate abroad talented young men in the fine art of architecture, it will be impossible to cope with the constantly expanding architectural program of the Government. There are so many urgently needed specific building projects that it is impossible to give such attention as is advisable and necessary to city planning problems throughout the Archipelago, and furthermore it is impossible with the limited supply of trained architects available to properly study in advance the larger architectural composition of which the first units are now being erected.

The consulting architect is by law required to approve all Government buildings, insular, provincial, and municipal, whether large or small, throughout the Archipelago. This brings to his office a tremendous volume of work covering a wide range of important and non-important projects. It would be a fine thing if the consulting architect's office could be augmented by an auxiliary force, organized especially to do small town work and to supply picturesque and attractive designs for use in minor communities, giving such work only the amount of architectural study and detailing appropriate to its relative importance in the scale of Government architectural work. At the present time numerous small town projects are necessarily abandoned to the mercy of local "maestros de obras," or local contractors, for want of sufficient designers in the architectural division to properly attend to them.

The standardization of public buildings is, under present economic conditions, necessarily the only policy. For every schoolhouse that can be designed there is the demand for the simultaneous construction of let us say ten others; and for every municipal building that can be designed there is the immediate need for, let us say, five simultaneous similar constructions. Standardization is obviously the only practical procedure under these conditions. As the architectural division grows and becomes able to cope with the demands for public works, it is hoped that the tendency toward standardization will be abandoned. Just as a person has individuality and individual taste in the matter of clothes and personal adornments, just so communities have a collective individuality and desire individuality in their public works. Instances can be recalled where a municipality, for example, has lost entire interest in a town hall project simply because it was ascertained that it was to be, when completed, identical to one in an adjacent town. Public spirit can be marshalled to improve public works in a manner to give the community distinctness, but becomes apathetic when required to construct architectural replicas. Standardization of Government buildings in the United States has during the last two years been seriously considered by Congress, but has met with the unqualified opposition of the architectural profession. In many cases, standardization in buildings is impracticable because of variations in sites, market conditions, and the customs and habits of various communities. While standardization of architecture may be necessary during formative periods such as now exist in the Philippine Islands, as a policy to be perpetuated, it is never desirable.

Prevalent wide spread and general interest in architecture is most gratifying. The importer is specially interested in Government functions with respect to customs; the medical profession is specially interested in Government control of Public Health; and the agriculturist is specially interested in agricultural legislation, but the importer, the physician, and the farmer, as well as the butcher, the baker, and the candlestick maker are all intensely interested in the Government architecture of their respective communities. Architecture is a major fine art wide in its appeal. It has been through all the ages the universally popular enterprise of mankind, in which people have expressed the degree of their civilization. We know more about ancient races directly and indirectly from their architectural monuments and accessories than through any other source of information. So, let us hope that while the utilitarian aspects of Philippine architecture will not be neglected, its historical significance and artistic importance may be emphasized, and that the rich resources of this land may be marshalled in the production of an architecture sufficient in quantity and quality to announce to posterity the constructive genius and artistic accomplishments of the present day.—Bureau of Public Works *Quarterly Bulletin.*

Mr. Inouye, Governor of the Bank of Japan

The appointment of Mr. Junnosuke Inouye, President of the Yokohama Specie Bank, to be Governor of the Bank of Japan, is one of considerable importance to Japan. Mr. Inouye stands out as a man of particularly broad vision, of deep understanding, and of wide knowledge of international relations and developments. There is none of that insular narrow-mindedness about Mr. Inouye which has characterized many Japanese in prominent positions, and which has led to so much misunderstanding and heartburning. He stands for straightforward friendship for, and constructive help to China, and is against the underground activities which have antagonised Chinese and caused suspicion of Japanese motives to develop in the minds of foreigners interested in China. Long ago he recognized that the chief aim of Japan should be to harmonise all relations with China, to cultivate the Chinese rather than to antagonise them. Nor does he uphold the doctrine that it is necessary for Japan to grab whatever is available while opportunity presents itself. He realizes that China is a country which has room enough for all trading people; that Japan can afford to observe to the fullest extent the principles of the "Open Door;" that no matter what the competition may be, Japan's geographical situation enables her to hold her own in a vast business which must expand the more China is opened up to commerce. Mr. Inouye is far-sighted enough to realize that Japan's national future depends upon the cordiality of the relations which exist with China. That China will expand and grow strong in the future is recognized by him, and no-one foresees better than he does the great loss that Japan will eventually sustain if friendship for her does not develop parallel with China's national, financial, commercial and industrial progress. The appointment to the Governorship of the Bank of Japan is a tribute to Mr. Inouye's undoubted worth and ability, and if precedents stand he will in time become the Finance Minister of Japan. Mr. Inouye will be succeeded at the Yokohama Specie Bank by Mr. Kajiwara, the vice-president, while Mr. S. Sudzuki, the general manager, will take the vice-presidency.

Early in March Mr. John Jay Abbott, representing a group of leading American bankers, arrived in China to study financial conditions and report to his principals. Naturally his visit has been invested with considerable importance in view of the enlarged interest of American financial and commercial men in China, and it is not surprising that a section of the Japanese press has taken occasion by the hand to attribute various motives both to Mr. Abbott and the American bankers. If conditions in China warrant the American financiers entertaining a proposition to re-enter the International Financial Group or to participate in a loan to China they will do so providing Mr. Abbott reports favorably. If he does not then American money will stay where it is. Mr. Abbott is not in China, as some Japanese papers think, to follow the practices of Mr. Nishihara and make special secret loans in return for concessions. Another absurd report insinuating that Mr. Abbott entertains ideas of becoming financial adviser to China also emanates from Japanese sources, and has been, we hope, effectively squashed by the American Minister who recently told a correspondent in Peking that Mr. Abbott's business relations and his importance to his home institutions are such that, no matter how desirous to assist China in placing her credit on a sound basis, he can entertain no thought of accepting an Advisorship.

New Engineering Works' Successful Year

At the annual general meeting of the New Engineering and Shipbuilding Works, Ltd., held at Shanghai in March, a dividend of 20 per cent. and a bonus of 10 per cent. was declared on the 1918 workings from a credit balance of Tls. 581,036.06, which included Tls. 43,952.70 carried forward from 1917. The dividends account for Tls. 149,002.50, while Tls. 250,000 was placed to material equalization fund, Tls. 25,000 to depreciation fund, Tls. 50,000 to dividend equalization fund, Tls. 53,333.38 to reserve, Tls. 20,000 to War funds, and Tls. 33,700.18 was carried over, these items making up the total of Tls. 581,036.06. The amount contributed to material equalization fund makes the total Tls. 350,000, or approximately 35 per cent. of the actual cost of the Works' stock, and this fund will act as a guarantee against loss from sharp downward prices in the near future, if such a condition should come about. The Chairman made the following remarks regarding the report and accounts:

> "When last I addressed you, I directed your attention to the fact that further additions and improvements were being undertaken, and such extensions as we have already made have not only fully justified the initial outlay, but have encouraged us in pursuing a policy of further development. The new slipway referred to was completed early in the year, has since accommodated many small craft, and thus relieved the dock and left it free for larger vessels, but in spite of this a great deal of work continues to go past us owing to our having only one dock. Your directors, therefore, have in contemplation the construction of another dock. With this in view, and the increased amount of new building we are undertaking, we had to provide for future extensions, and consequently decided to purchase the only suitable site still available, to which I have already referred. The piece of land acquired has over 550-ft. of river frontage, and you will thus see should prove ample for future requirements and the carrying out of the views which we have for its development. During the year we have built two 2,000-ton steamers, one steel three-masted schooner with auxiliary motors, one steel ferry launch, one steel motor tug, one steel pontoon, in addition to the usual repair work, etc., and we have since closed contracts for four further 2,000-ton vessels. . . . "

Referring to a letter which had appeared in the North-China Daily News, signed by shareholders of the Company, protesting against the moderate dividend on the year's workings and suggesting a larger bonus in cash or the issue of unissued shares to shareholders, the Chairman first called attention to the fact that the signers of the protest represented about one-half of the number of shares under his personal control, and that therefore his auditors would understand that if the proposals did not have his approval it was because he did not believe the proposals to be in the best interests of the Company. The Chairman then called attention to the report of the Bangkok Dock Company, a concern with a capital of Ticuls 1,000,000, whose credit balance was Ticuls 808,001.32, and who had decided to pay a dividend of 20 per cent., equal to Ticuls 200,000, and placed Ticuls 100,000 to reserve and Ticuls 400,000 to dock extensions and improvements. He added:

> "You will see from this that in making the proposed distribution of profits for last year we are in the good company of other similar undertakings in the East, who realize the necessity (the same as we do) for being conservative and providing for future extensions. The policy of this Company in the past has been to pay its shareholders a fair dividend, whilst continuing steadily to consolidate the Company's position, and as long as I control the policy of the Company this policy will be maintained. During the past four years, if the present distribution is approved of, 92 per cent. will have been paid away in dividends. . . . "

British Chamber of Commerce at Shanghai

At the annual meeting of the British Chamber of Commerce, Shanghai, on March 20, Mr. J. Johnstone, the Chairman, made an inspiriting address in which he disclosed that the Chamber had been largely instrumental in solidifying British interests in Shanghai in a way both new and striking, and in developing new Chambers in various important centres in China. It had been decided to hold an annual conference in Shanghai to discuss matters concerning the welfare of British trade in China, but in addition it had been arranged that at all times the various Chambers would harmonize their efforts in the carrying out of objects of general interest. The efforts made by the Chamber to secure the repatriation of the Germans was briefly mentioned, Mr. Johnstone remarking that just as the Chamber had been largely instrumental in driving the Germans out of the country it had also been instrumental in destroying their trade. With regard to post bellum activities the Chamber had taken steps, particularly with regard to the piece goods trade, to remove German influence by passing the following resolution for transmission to all British Chambers in China as well as to Bradford and Manchester:

> "That this Committee is strongly in favour of steps being taken to prevent the further use in the China market of enemy 'chops,' or of 'chops' which though owned by British firms have hitherto been distributed by, or associated with, enemy firms."

The Chairman announced that in order to further British interests the Journal of the Chamber would be reorganized and issued for public information in future rather than as a private paper as heretofore. Likewise the Chamber would do its best to encourage Anglo-Chinese co-operation, as well as Anglo-American co-operation. In the latter respect the Committee had made every effort during the past eighteen months to two years to get into closer touch with Americans in China, the Chairman remarking that "we recognize, as indeed all thinking men must, that there is more to be gained by the active co-operation of American and British merchants in China than by pursuing the old policy of everyone for himself and the devil take the hindmost." Mr. Johnstone urged that while sensible people would recognize that co-operation was not for philanthropic purposes, no-one being out here for the good of one's health, that did not mean that they could not work together. They could and should do so, and differences should never be allowed to become so wide that they cannot work together harmoniously to help develop the country, which awaited their assistance along the right lines, to progress and prosperity. The following committee was elected for the coming year:

*A. W. Burkill, *H. E. Arnhold, A. Brooke-Smith, G. T. Edkins, *H. H. Girardet, *A. Howard, L. W. Hutton, *C. G. Humphrys, *H. A. J. Macray, *E. C. Richards, *H. G. Simms, A. I. D. Stewart. *Members of last year's committee.

Improvement of Chinese Cotton

It seems reasonably definite that something material and practical is about to be done in the way of improving the quality of Chinese cotton. The Chinese Cotton Mill Owners' Association, a body composed of Chinese interested in spinning and weaving enterprises in Shanghai, Tientsin, Hankow and other cities, has decided to go ahead with the work on their account and without foreign assistance. Their plans call for the establishment of at least six experimental stations, the engagement of an American expert, and the importation of American seed. A fund of Tls. 15,000 annually will be raised by a voluntary taxation on the part of the mill owners amounting to one hundredth of a tael per picul of cotton consumed. The experimental work will be under the direction of Mr. J. H. Reisner, professor of agriculture at Nanking University, and an expert cotton agriculturist will be engaged by a representative of the Department of Agriculture at Washington, who passed through Shanghai recently on his way home from a journey to China made for the purpose of selecting Chinese orange stock to graft on Florida trees. After a consulation between Mr. Reisner and the Washington representation, an assortment of cotton seed was requested of Washington by cable. The goal is the production of a finer and longer staple than that now grown in China, and therein lies the future of a great industry, for it is conceded with proper cultivation that China might become a close second to the United States as a cotton producer.

The Korean Revolt

On the afternoon of March 1 an insurrection broke out simultaneously in many parts of Korea, taking the Government almost completely by surprise. Police boxes and police stations were the objectives of the mobs, at Seoul, Chinnampo, Pyengyang, and a number of other lesser known places, where the police returned their attacks with rifle fire or fixed bayonets. In the clashes with the police a number of Koreans were killed or injured, and the police are still busily engaged in attempting to bring the demonstrators under control.

It appears that steps had been taken by disaffected Koreans in America, Hawaii, Manchuria, China and Japan, to bring about a "passive revolution" against Japanese rule, and representatives of these natives had returned to Korea only a few weeks prior to the insurrection for the purpose of instituting a passive agitation against the Japanese Government. Nothing in this direction had been accomplished up to the time of the incident which seems to have fired the frenzy of the people—the death, under peculiar circumstances, of the old ex-Emperor Yi, which the Koreans believed was due to suicide to prevent the consummation of the marriage of the ex-Prince Kon to the Japanese Princess Nashimoto. Suicide under the circumstances would have almost deified the old ex-Emperor, who during his life was held in great affection by his people, and who has become a glorified and worshipped saint in his death. The suspicion that his end was due to suicide was heightened by the death, at about the same time and under similar circumstances, of the father of a Korean girl to whom the Prince had been engaged prior to a visit to Japan during which the engagement was forcibly broken off and the engagement to the Japanese Princess announced.

The discussions at the Peace Conference concerning the "Fourteen Principles" and the agitation of the principle of self determination had made a strong appeal to educated Koreans. At the same time a rumour became current that a representative from the Conference had been despatched to Korea to investigate conditions in Korea and that the Conference would adjourn late in March, and the leaders of revolutionary thought looked upon the present as their last opportunity to demonstrate their feeling against the Japanese. All these factors combined to bring about the uprising.

Declaration of Independence

The text of the Korean declaration of independence, which was promulgated by a society known as the Korean National Independence Union, is as follows:—

We, the Korean Nation, hereby declare the independence of Korea before all nations, assuming that this will be generously recognized by them.

We declare this with the united voice of twenty million people in the name of Justice and Humanity. We are no mean people, having a long history as a distinctive, integrative and self-governing nation through the course of forty-three centuries. It is the most solemn duty for us to secure the right of free and perpetual development of our own national character and ability, adapting ourselves to the principles of the reconstruction of the world.

It is nearly ten years since we were for the first time in our history put under the yoke of another nation and made a victim of the cursed militaristic imperialism of the old world. Since then, how much has our spiritual development been hampered, our national dignity injured, and how many opportunities have been lost to make a contribution to the civilization of the world?

Oh! Fellow-citizens: The most urgent and the greatest duty for us is to secure our national independence, in order to wipe out the past resentment, to get rid of the present sufferings, to remove the threatenings of the future, to stir up the national spirit and vitality so long suppressed under the unjust *regimé* of Japan, and to leave our children eternal freedom and perfect happiness instead of the bitter and shameful inheritance of to-day. We shall fight to the last drop of blood in the great cause of liberty.

We do not blame Japan for breaking treaties in which so often and solemnly she promised to guarantee the independence of Korea. Nor do we complain of her for calling our land a colony and treating us as slaves. It is unnecessary for us to find faults in others. We do not mean to take such a measure as to avenge ourselves upon Japan. All we desire is to right wrongs done to us, not by the Japanese nation but by a few of her statesmen who were led by the 'old' aggressive policy.

See the actual outcome of the annexation which was made in 1910 without the free consent of the people concerned. A bitter irreconcilable animosity is growing deeper and deeper between the two peoples, though it has been glossed over with a tranquil appearance caused only by heavy pressure, and by a series of so-called statistics, most of which have nothing to do with our welfare. It is clear that the two nations must and ought to enter into a new relationship of good friendship in order to enjoy permanent happiness and to avoid further perils on both sides. Moreover, in the matter of maintaining the peace of the Far East, the independence of Korea is not without deep significance. It is not only because the unjustly subdued twenty million people of Korea must prove a source of incessant alarm, but because any further occupation by Japan of Korea is likely to provoke more suspicion and fear of Japan in the minds of the four hundred million people of China; whereas true friendly relations between the two peoples is the only basis upon which any eternal peace of the East can possibly be established. Could any international peace be expected without the perfect harmony of the Eastern Nations? Hence we are assured that the independence of Korea is worthy of universal consideration and approval.

Ah! A new epoch is opening before us. The age of might is gone, and the age of right has come. The history of mankind will henceforth shine with the glorious light of the new civilization, led by the spirit of Humanity which has been fostered through all the past ages. We have no hesitation and no fear in marching on towards our goal, as we are now at the new turn of the world and a fresh start of the universe. We shall live. We shall be free. We shall enjoy the Heaven-given happiness. We shall do our best as a member of the family of nations in rendering any service called for to promote the peace and civilization of the world.

We have risen now. Justice is with us. Righteousness is leading us. All citizens, male and female, young and old, have risen up from the gloomy dungeon to push their way into the bright Freedom. Our forefathers inspire us and the world supports us. Go on, Fellow Citizens.

Repatriation of Germans

The repatriation of German subjects in China, concerning which there has been much discussion and preparation within the past year or so, is being vigorously carried out. Three shiploads of German subjects who had been concentrated at Shanghai from all North China sailed from Shanghai early in March. On board were 1,797 souls, of whom 991 were men, 400 women and 406 children. Special trains brought the Germans to Shanghai, and they were held in internment camps until arrangements could be made by the Chinese authorities for embarkation. Their number included legation guards, merchants, officials and missionaries and their families. Some thousand additional enemy subjects will be repatriated by the s.s. *Antilochus* which is due to leave Shanghai about April 1. Enemy-owned banks and business houses are being liquidated by the Chinese Government, and soon every trace of enemy influence in China should be eradicated. With the departure of the Germans and their business facilities, goes the big German share of the China trade—which in 1913, in the case of imports, amounted to Tls. 28,302,403 from Germany proper and Tls. 4,121,913 from Austria-Hungary in direct trade, and a large proportion (probably 50 per cent. or more) of the Hongkong imports of Tls. 171,636,099. German exports were not much less, but much of these went to other countries for which the German marine acted as a carrier, and as the War has created new and larger markets for Chinese produce, China has not felt the loss of German patronage. The increasing American purchases, for example, have alone wiped out the loss. At the same time, China has been relieved of the heavy interest charges and capital of the German Boxer indemnity. Taking it all round, China has gained much by her entry into the War and the repatriation of enemy subjects.

"China in 1918"

Any contributions to a wider understanding of China and her problems at this period are to be welcomed and will be appreciated by an increasing range of readers. It is therefore safe to assume that the enterprise of the "Peking Leader" in issuing as a special supplement a budget of important articles by authorities on their subjects will be highly appreciated by thoughtful students of Chinese affairs. Mr. M. T. Z. Tyau, the Editor of the "Peking Leader", who has devoted considerable attention to the development of his paper, conceived the idea last year of marshalling a number of authorities in the production of a special supplement. This year, under the title of "China in 1918," he has succeeded in repeating the operation and with even better results than previously. The supplement is larger and the range of subjects dealt with is greater. They cover the 1918 status of China's Finances, Railways, Foreign Relations, and Salt Administration, the Revision of the Chinese Customs Tariff, Educational Problems, Political, Commercial and Industrial Problems, Chinese World relations, and Music, Drama and Philanthrophy.

The issue comprises 136 pages of solid worth, which all who are interested in China should acquire. The well-considered articles of such scholars as Dr. W. W. Willoughby, formerly Legal Adviser to the Chinese Government, who writes on "Causes which have Impeded the Progress of Republicanism in China;" Dr. W. C. Dennis, present Legal Adviser, on "Follow the Law;" Julean Arnold on "China's Industrial and Commercial Outlook;" Forsyth Sherfesee, Forestry Adviser to the Chinese Government, on "Some National Aspects of Forestry in China;" Putnam Weale on "The Nationalization of Chinese Railways;" Professor L. R. O. Bevan on "A Survey of Educational Progress in China;" David Z. T. Yui, M.A., on "The New Emphasis on Education;" P. W. Kuo, PH.D., on "A Survey on Educational Progress in China;" Mon Lin-chiang, PH.D., on "Vocational Education in China;" Professor Suh Hu, PH.D., on "A Literary Revolution in China;" Lin Yu-tang, B.A., on "Peking Government University and the Intellectual Leadership of the Nation;" H. C. Meng, B.A., on "What the Chinese Read To-day;" Dr Ya-mei Kin, on "Some of China's Contributions to the World;" Mrs. K. T. Ouang, on "Progress of China's Womanhood;" Dr. Ida Kahn, on "Women in China To-day;" D. K. Lieu, B.A., on "Chinese Music;" Prof. Soong Tsung-faung, M.A., on "Contemporary Chinese Drama;" and Prof. L. K. Tao, B.SC., on "The Background of China's Philanthrophy," stamp the compilation as being of a high-class and authoritative order. The article on China's railways in 1918 is undoubtedly by one having access to accurate documents; Mr. Hollington Tong's article on China's Finances in 1918 is full of information, covering Japanese Loans, Domestic Loans, Currency, various revenues, etc., while the article on China's Foreign Relations deals with various phases of international affairs.

Mr. Tyau is to be congratulated upon his production and none claiming interest in China and her development will care to be without the number. That the first issue was sold out immediately upon publication is evidence of the appreciation of the public, and to meet the demand the number is being reprinted. The new issue will shortly be on sale at $1 per copy, and our advice to readers seriously interested in China is to secure one.

Laws Governing British Subjects in China

"Orders-in-Council 1904-1915, with Amended and Repealed Articles Noted, and an Index." By W. B. Kennett.

"Rules of Court 1905-1906, with Amended and Repealed Rules Noted, and an Index." By W. B. Kennett.

British subjects in China are amenable to British law as made applicable by Orders-In-Council which are promulgated from time to time. The Orders-In-Council now in force date from 1904, when the first of the Orders at present applicable was published. The Order of 1904 establishes His Britannic Majesty's Supreme Court for China and lays down the general principles of the jurisdiction exercisable thereunder, with particular provisions relating to such matters as Bankruptcy, Probate, Lunacy jurisdiction, Mortgages, Bills of Sale, etc. Subsequent Orders-In-Council contain various amendments and deal with such subjects as Admiralty Jurisdiction, Registration of British subjects, and the jurisdiction relating to Companies under the China (Companies) Order-In-Council of 1915.

The Rules of Court comprise the various sets of Rules made by the Judge under the powers conferred upon him by the Orders-In-Council.

Mr. Kennett has rendered a signal service to all who have to consult the Orders-In-Council and the Rules by collecting them in the above-mentioned volumes, previous to the publication of which the various sets of Orders and Rules could only be had in separate form, and, as many of the sections of the earlier Orders and Rules have been repealed or amended by later ones, the inconvenience and risk of mistake was obvious. The volumes contain complete indices, and all amended or repealed Articles or Rules are noted in large type in the margin.

Both volumes are published for the Committee of the Bar of H.B.M.'s Supreme Court of China by the North-China Daily News and Herald, Ltd. The price of the book of Orders-in-Council (132 pages) is $5 Mex. and of the Rules of Court (309 pages, bound in cloth) $8 Mex.

Some remarks made by Mr. E. F. Mackay, of Messrs. Butterfield and Swire, as Chairman of the Shanghai General Chamber of Commerce, are worthy of the widest publicity and ought to make the Chinese militarists blush with shame. Mr. Mackay was commenting on the present internal conditions and spoke as follows:—"While China has continued to be torn from end to end with internal strife kept alive by bandits with the approval of a military party which has apparently everything to gain from such dissension, its neighbor Japan has quietly, but effectively been building up wealth beyond the dreams of her most avaricious statesmen To-day the government of China is strangled in a mesh of loans, many of the country's best assets in pawn, with no outstanding leaders amongst its vacillating statesmen, and with no defined policy as to how it is to become relieved of its burdens. And yet we feel that, well governed, China might become a giant among nations. The country is rich in minerals and productive power, has a sober, industrious and easily governed people, with abundant capital which should be reaping all the advantages of cheap labor. Where then do we look for the cause of these distressing conditions? It is no new one. It is in this Republican, as it was under the old Manchu Government, the fruit of inefficient, if not actually corrupt, officialdom, and until the country from end to end is rid of the existing *régime*, and a new type of men installed in their place, who will be actuated solely by high principles of regard for their country's welfare and zealous not of their own, but of their country's advancement, so long will China continue to drift from bad to worse, until foreign Allied control becomes, if it has not already become, a palpable necessity"

Mr. Aldridge, of the Shanghai Municipal Electricity Department, in his annual report, is optimistic concerning the industrial future of Shanghai. He is of opinion that "Shanghai, with cheap power, may yet develop into a steel producing centre." He points out that Shanghai is "better equipped and organized for manufacturing purposes than any other city in China . . . and is both the financial and shipping metropolis of China." There is no question that Shanghai will always be the first city in China, and if arrangements are made for uninterrupted supplies of coal to be landed here cheaper than it has been during the past year or two there is no reason why it should not be the first manufacturing city.

The total units generated by the Shanghai Municipal Electricity Department during 1918 amounted to 106,045,021, the units sold amounting to 86,375,659, of which 66,024,895 was for power and 3,764,678 for traction. Shortage of plant seriously interfered with the proper development of the service.

The Shanghai Harbor Question

Full Investigation by the Whangpoo Conservancy Board

The Whangpoo Conservancy Board will shortly begin a full investigation of all technical possibilities of further developing Shanghai as a first class port, which will be conducted on the broadest lines.

In judging the whole matter of further harbor development, there are two aspects: the purely engineering one and the general and economic one, of which, of course, the latter is determinative.

While these two are interdependent the engineering possibilities must be first investigated. Several schemes to make Shanghai accessible to ocean traffic present themselves and each must be investigated as to the cost, the time of execution and the utility of the present facilities while executing any project, etc. Various ideas are technically possible and, according to whether the requirement as to depth is put at 30, 40 or 45-feet, different solutions are indicated.

When the above technical possibilities have been accurately estimated, they must be weighed together with economic and general aspects of the matter—and an estimate be made of what the requirements are or should be—as a necessary basis for the final decision by the interested parties.

The Board having long recognized the need for soon devising sound lines of harbor development and thus secure the future prosperity of the port of Shanghai issued in July, 1918, a report prepared in 1916 and 1917 by an eminent firm of Consulting Hydraulic and Harbor Engineers in consultation with the Engineer-in-Chief. The report, which immediately raised the issue to the highest degree with the assumption of maximum requirements as to depth, etc., pointed out various schemes as technically possible, etc., and concluded by recommending that an investigation of all the possible schemes should be undertaken. The Whangpoo Conservancy Consultative Board, supported by the General and the different National Chambers of Commerce at Shanghai, recommended to the Whangpoo Conservancy Board that the investigation be *immediately undertaken.*

The Engineer-in-Chief reported that the estimated cost of such an investigation would be some Tls. 350,000 including the submission of the results of the investigation to an international committee of consulting engineers of high repute from the home countries, who would finally decide as to the best technical course, the engineers to be chosen by the leading shipping interests as represented on the Consultative Board.

PROGRAMME OF INVESTIGATION.

It is aimed to take into consideration all the possibilities for rendering Shanghai accessible directly or indirectly to first class ocean traffic. It is hoped that no conceivably practicable scheme will be overlooked, but the following are the principal alternatives:—

(1) *The regulation of the Fairy Flats by training works.* This scheme was mentioned as favorably indicated in the report but the investigation is in no way committed to favoring this or any other scheme. The regulation of the lower Yangtze can also be done by regulating the North Channel or the North Branch or both, or by regulation of the North Channel. These will also be investigated.

(2) Assuming the possibility of regulating the lower Yangtze, the *construction of a harbor near Woosung Forts or inside Woosung*, which may or may not be locked. The scheme of a wet dock was favored by Capt. W. F. Tyler, the former Coast Inspector, in his comments which were invited on the report and had received preliminary consideration by the reporting engineers.

(3) Assuming the regulation of the lower Yangtze, the *continued use of the open Whangpoo as a deep harbor*, its depth being increased by (1) dredging, or (2) enlarged tidal or fresh water flux from the Yangtze at Kiangyin, or (3) by narrowing or (4) by use as a locked harbor.

(4) The construction of a *combined open and locked "port de vitesse" at Fenghsien on the Hangchow Bay* with ship canal to the Whangpoo. This scheme was conceived and submitted with a memorandum and plans during the consultations in August, 1917, by Mr. P. G. Hornell, one of the two engineers consulted. As the preliminary report only assumed and dealt with maximum requirements—for draft of 40-ft. with possibilities of improvement to 45-ft. which are not available in the Bay—it was not published.

(5) The formation of an *open harbor at Yangtze Cape* and with or without a canal to the Whangpoo. One such scheme at Yangtze Cape has been prepared subsequent to the publication of the above report by Mr. S. J. Powell. Several varieties of this possibility had previously been in August, 1917, taken into account by the consulting engineers reporting to the Board, but as it did not satisfy the maximum requirements assumed in the preliminary report, it was not published with the same.

(6) The formation of *a dock harbor by excavation immediately* east of Shanghai, with ship canal connection to Hangchow Bay.

(7) Assuming the training of the Yangtze and the Whangpoo, the formation of *dock basins along* the Whangpoo, including among other possible locations the tidal basins on the left shore below the Point.

(8) Assuming the training of the lower Yangtze, the making of *a new outlet of the Huangpu* eastward above Gough Island, converting the present mouth of the Whangpoo into a dock harbor. This new outlet was once proposed by Mr. J. de Rijke as one of the best solutions for the Whangpoo River improvement in 1898, as his scheme "A".

(9) The *diversion* of the Whangpoo to Hangchow Bay, leaving the lower part of the present river as a harbour basin.

(10) Assuming the training of the South Channel, *an enclosed harbor on the right bank of the Yangtze below the mouth of the Whangpoo.*

(11) An improvement of the present arrangement, without radical alteration.

The programme includes the making of all necessary surveys of the Estuary and of the different sites for a "port de vitesse" at Hangchow Bay, indicated by Mr. Hornell in his memorandum of August 31, 1917, etc., etc. and the making of alternative plans and estimates for any reasonable practicable scheme varied according to different assumptions as to requirements.

All these and sundry other schemes are briefly suggested in the report or have been formulated by the Conservancy's engineers and their technical and economical features will be gone into in the course of the investigation. It cannot be too strongly remarked that there is no prejudice in favor of any particular scheme and that while all possible major schemes were formulated as early as 1917, suggestions of any kind will be welcomed.

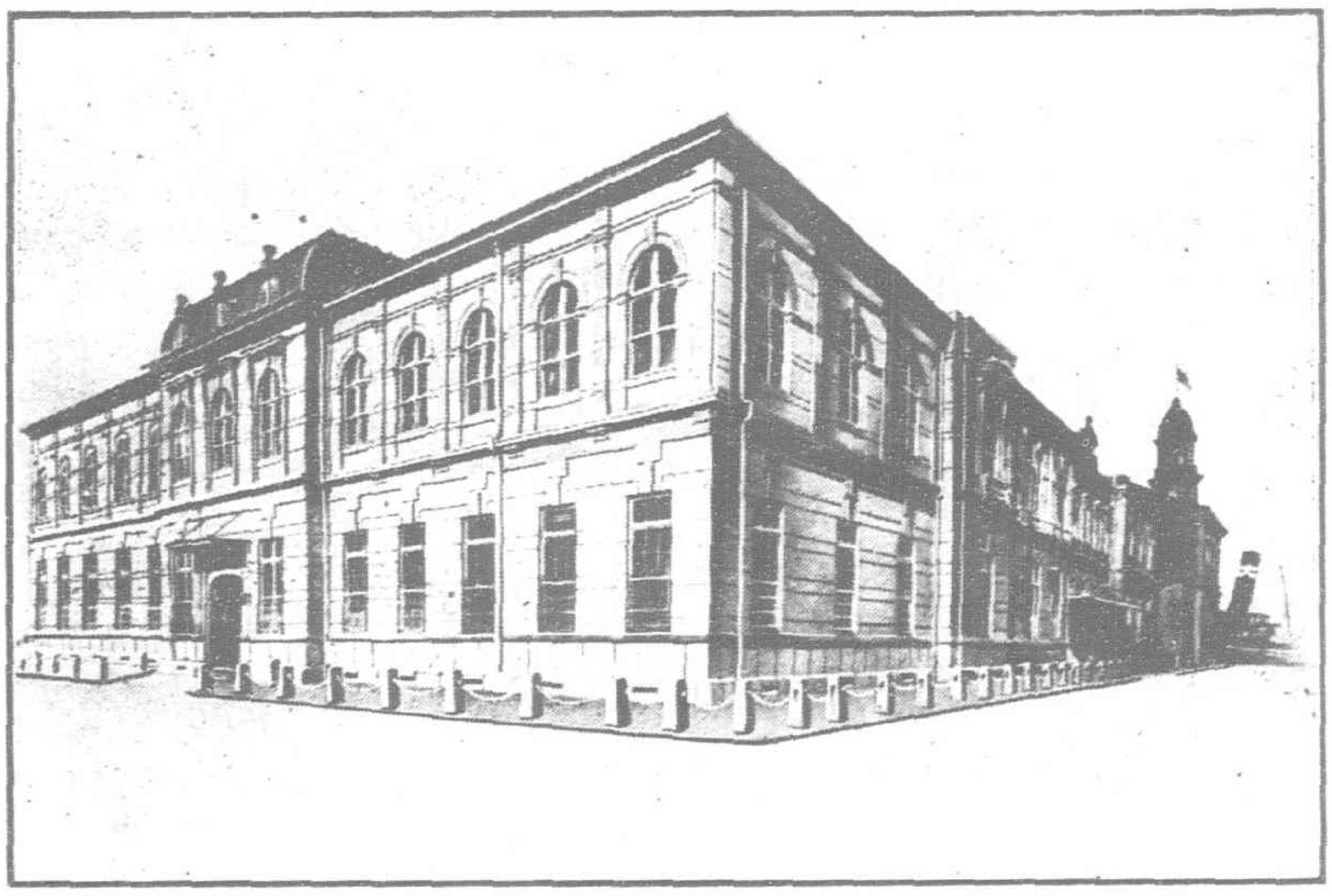
One of the main difficulties in deciding on such large and far-reaching scheme either one way or the other—is and will always be the correct estimate of the future requirements—as to *draft of ships, magnitude of trade* and *shipping*, the general *transportation development* in China as bearing on the port, etc., etc. It is hoped that also on these points, data will be gathered.

The whole idea of the Harbor Investigation is to benefit China in general and Shanghai in particular and not serve any particular private interest. The results of the investigation will be put before an international committee of engineers, composed as aforementioned, with all data and plans for the different projects presented in an easily digestible form, for a final decision of the technical issues.

Remarkable Development of Japanese Shipping

The Past and Present of the Osaka Shosen Kaisha Illustrates the Extraordinary Progress made in Ship-owning and Operation in Japan

The tremendous development of Japanese shipping and the striking prominence which it has lately assumed in the world's carrying trade constitutes one of the most important commercial advances made in modern times. Japanese ships are now traversing every ocean; the passenger liners compare with those of any other nationals both with regard to appointments and management, and the freighters are increasing their radius of action annually. Japan is established as one of the leading maritime nations, and how her mercantile fleets have been built up can be gathered from the history of but one of her big companies, the Osaka Shosen Kaisha, an outline of which we publish for the information of those interested in Japan's phenomenal shipping progress.



HEAD OFFICE OSAKA SHOSEN KAISHA, OSAKA

The Osaka Shosen Kaisha (Osaka Mercantile Steamship Co., Ltd.), equipped with a capital of Yen 50,000,000, and a fleet of over 446,000 tons gross, is now conducting about 50 regular services on the important commercial highways of the world, the total length of which regular lines reaches more than 170,000 nautical miles. In 1918 the Company earned Yen 167,871,439, the figures for the latter half being abnormal. In that period the earnings were Yen 100,654,942.59, of which Yen 24,491,945.51 was net profit. The earnings referred to were derived from freight earnings of Yen 87,803,966.19 and passenger fares totalling Yen 3,367,611.85. A dividend of 60 per cent was declared. In 1917 the dividend was 45 per cent., and in 1909 six per cent. When the comparatively short period of the Company's existence is remembered and also its modest beginning, the progress it has made may be spoken of as marvellous. The Company was established in 1884 with a capital of only Yen 1,800,000 and with a fleet of steamers having an aggregate tonnage of 17,000, the total miles covered by the lines of services being not more than 8,500, practically confined to the western half of the Japanese Empire.

Establishment of the Company

With Osaka, the Commercial Capital of Japan, as its centre, water-transport business sprang up in the western parts of Japan in the early part of the Meiji era, its rapid development reaching perhaps the highest point of its prosperity at the time of the Satsuma Rebellion, which took place in 1877. Subsequently a tendency was shown towards an over-supply of shipping, the competition which followed among steamship owners growing keener as time passed and causing frenzied freight wars to be waged, each struggling to drive out the other. A decline followed in freight rates, while the reckless running of steamers resulted in constant sea casualties and other attendant evils to such an extent that public confidence in the shipping business was entirely lost.

This condition of affairs highly alarmed the Government, and the steamship owners being no longer able to endure the conditions, a special effort was made to remedy the situation, but the evils were too deeply rooted to be easily removed. The Government and its advisers were convinced that the only means available for the rescue of the situation was to effect a combination of all the steamship owners and incorporate them into one concern. With that end in view the promotion of a joint stock steamship company was undertaken and after three years' strenuous labor the late Mr. Hirose and other men of note succeeded in bringing together a large number of steamship owners with over 90 steamers. Thus the prospect was materialised and May 1, 1884, saw the birth of a Company with a capital of Yen 1,800,000, that being the beginning of the "O. S. K." (Osaka Shosen Kaisha).

At the outset the Company conducted 18 services between Osaka and ports of Shikoku, Kyushu and San-Yo districts, which are mainly situated on the border of the Inland Sea. During the first few years almost insuperable difficulties had to be faced in the conduct of the Company's business, because not a few steamship owners who had not joined the combination were still continuing the freight war. In such a situation the desired profits could not be realized, while at the same time the Company was faced with the pressing need of the general improvement of its steamers. The vessels taken over by the Company at the time of its establishment represented practically the whole amount of the paid-up capital, and most of them were badly worn, while the new ones urgently needed thorough repairs. The vital matter of "wear and tear" of the vessels was almost entirely neglected on account of the keen competition in shipping circles for many years and many of the steamers in the Company's fleet soon had to be laid up. To replace older steamers with new ones made it necessary to place the Company on a stable foundation and it was realized that this could not be deferred indefinitely. So the Company concentrated its energies on the readjustment of the fleet, but in carrying out this scheme the financial condition of the Company hardly allowed it to attain its object. Eventually the Company appealed to the Government for assistance but the appeal was not responded to until 1887 when an annual subsidy of Yen 50,000 was granted for eight years, commencing from 1888, from which date the improvement of the steamers in the Company's fleet began. The old vessels were gradually replaced by new ones from that time on and a general improvement in the lines of services was effected step by step, with a corresponding substantial increase in the revenue which placed the Company's finances in a favorable position.

After the Sino-Japanese War

Upon the completion of the first stage of the improvement of the ships, which enhanced the stability of the Company, the capital was increased to Yen 2,500,000 in 1894 preparatory to a further extension of the business. In the same year political troubles arose in Korea, which plunged Japan and China into war, and the Company placed 30 of its steamers, with an aggregate tonnage of over 12,500, at the disposal of the Government for military purposes. The plan then laid out for the immediate widening of the scope of the Company's business had, therefore, perforce to be deferred. The war happily came to an end in 1895, and as a result of the peace treaty then concluded between Japan and China, Formosa was annexed.

The time now being considered ripe for the proposed extension of the Company's business, the scheme was carried out step by step. A regular service was opened to Formosa from Japan proper in 1896 and coasting services in the new territory were opened the following year; the Yangtzekiang service between Shanghai and Hankow in 1898, and the South China Sea services between Formosa and South China in 1899. The Company's capital, which was doubled and brought up to Yen 5,000,000 in 1895, was further increased to Yen 10,000,000 in 1897 to meet the requirements of the expansion which was taking place. In the meantime the Company possessed 23 newly-built steamers, with a total tonnage of over 29,000. The following comparison of the services conducted by the Company in 1894 and 1899 will show the marked development that had taken place:—

Coasting Service				Adjacent Service			
Year	Lines	Mileage of Lines	Tonnage of Steamers	Year	Lines	Mileage of Lines	Tonnage of Steamers
1894	13	7,000	13,052	1894	2	2,333	2,303
1899	14	6,592	10,766	1899	13	18,598	28,750

As previously stated, the Company's business was at the beginning confined exclusively to home coasting services. The first foreign service was started in 1890 between Osaka and Fusan, Korea, which was followed by the Osaka-Chemulpo service opened in 1896. The total tonnage of the steamers running in 1894 on these two foreign lines was more than 15 per cent. of the rest of the Company's fleet, while the tonnage on the same lines in 1899 had grown close upon three-fold of the figures for 1894. It will thus be clearly seen that very rapid progress was being made.

A considerable amount of money was invested on enlarging office accommodation and improving the fleet in preparation for further extension of business, but much immediate return was not shown. Meanwhile, however, trade depression followed the business boom after the war and this reaction involved marine transport business generally in serious depression, and consequently the Company was a heavy financial sufferer. This situation made it necessary for the Company to cut down the capital to Yen 5,500,000, then the paid-up amount. Subsequently, however, the profits of the Company increased with the general revival of trade, and in 1900 it was again decided to increase the capital, this time to Yen 11,000,000, subscriptions for the increased capital—Yen 5,500,000—to be invited at opportune times. Between 1901 and 1904 Debentures were issued to the amount of Yen 4,500,000, and a further extension of the business was thus undertaken. The South China Sea services were largely extended and the powerful competitors in the field were overpowered. This was followed by the opening of the Osaka-Chinnampo, Osaka-Gensan and Yokohama-Takao lines. Thus a remarkable development in the Company's business was made in a few years from 1903. But, on the other hand, the coasting service had been neglected for a time on account of the rapid development in the new foreign services. Upon the completion of the extension of the foreign services to Formosa, North China, Korea, Vladivostok in 1900, the Company bought up the Kyoritsu Steamship Company and thus monopolized the services to Ise and Owari bays; and in the following year opened new services to the Japan Sea ports. Through the opening of these various services to new fields, the Company's business was gradually extended. The following figures show its development between the years 1899 and 1903:—

Coasting Service				Adjacent Service			
Year	Lines	Mileage of Lines	Tonnage of Steamers	Year	Line	Mileage of Lines	Tonnage of Steamers
1899	14	6.529	10,766	1899	13	18,598	28,750
1903	20	10,106	20,875	1903	22	20,875	47,625

The number of steamers in the Company's fleet at the end of 1903 was 81 with an aggregate tonnage of over 66,400, the average tonnage per vessel being 820. Compared with the figures at the end of 1894, the number of steamers showed an increase of 29, and the total tonnage an increase of 48,900, the average tonnage of each steamer being 460.

Development After the Russo-Japanese War

Diplomatic relations between Japan and Russia being broken off in the early part of 1904, a great war was again embarked on and thereupon the Company offered seventy-three steamers, representing over 78,000 tons for the service of the Army and Navy. This made a considerable gap in the steamers available for the ordinary services. In the meantime the Russian warships were molesting Japanese merchant ships, and the Korean and Formosan services as well as the coasting trade on the Japan Sea had therefore to be suspended for the time being. Happily, however, the Japanese Navy soon obtained supremacy on the Far Eastern seas, and the Company chartered or purchased many steamers and took means to make up their shortage in vessels, while the services of the peace treaty, a large number of steamers was released and restored to their normal state. Then, upon the conclusion of the peace treaty, a large number of steamers were released from the Government service, and at the same time many of the captured vessels were disposed of, thus making a substantial addition to the general supply of steamers, which resulted in an oversupply of shipping and a corresponding heavy decline in freight, bringing about an unprecedented depression in the shipping business, which continued for the next few years. The Company, however, maintained its progressive policy during these difficult times, and undertook a third extension of business. In 1904 new shares were issued to the extent of Yen 5,500,000, for the increase of capital already decided, and in 1906 the capital was further increased by Yen 5.500,000, bringing the total up to Yen 16.500.000. Upon the completion of the payment of the increased capital in 1909, debentures were issued to the amount of Yen 3,000.000, and the proposed extension of business was gradually carried out. By this extension the American and Bombay services were opened, the coasting and adjacent services were extended and increased.

The Opening of the American and Bombay Services.—The adjustment of coasting services forms the first period of the business of the Company, the development of the adjacent services the second period, and the further development accomplished after the Russo-Japanese war the third period. Another period may be said to begin with the opening of the American and Bombay services. Immediately after the Russo-Japanese war was over, the Company made preparations for opening the American service, and in 1907 a contract was entered into between the Chicago, Milwaukee and Puget Sound Railway Company for through traffic, and at the same time orders were given for the construction of six steamers of 6,000 tons each from home shipbuilding yards. The American service was opened in 1909 upon the completion of the Pacific coast route of the American railway company. On the other hand, from 1907 the O.S.K. sent steamers at stated times to India and Australia preparatory to the opening of regular services, and in 1912 the Company joined the Shipping Conference and in 1913 opened a service between Yokkaichi and Bombay.

Development of the Adjacent Services.—The Company had been concentrating their energies on the adjacent services, *i.e.*, the steamers running to Formosa, China, Vladivostock, and Korea. In 1905 the Osaka-Dairen and Osaka-Antung services were opened; in 1906 the Osaka-Tientsin and the Nagasaki-Dairen services were inaugurated, and the Vladivostock service the following year, and then the Yokohama-Dairen line. In the same year a consolidation of the Japanese steamers trading on the Yangtzekiang was effected and the Nisshin Kisen Kaisha (Japan-China Steamship Company) being formed, the O.S.K. transferred its steamers employed on the Yangtzekiang, together with its property on land, to the new company. In 1903 the Company opened the Saghalien services and thus contributed its part towards facilitating the administration of the new territory. The Osaka-Seishin service was started in 1910 and the Formosa eastern coast service in 1911 to assist the development of this remote country. Headed by this Company, those business men engaged in the water transport business in the neighbourhood of Saghalien formed a new undertaking in 1914 under the title of the "Kitanihon Kisen Kaisha" (North Japan Steamship Company), to which concern the Company transferred its steamers, etc., used on the Saghalien services.

Development of the Inland Sea Trade.—The land surrounding the Inland Sea is rich and fertile and in no other part of the country is the freight traffic more active than thereabouts. This trade has been carried on as quite a feature of the Company's business since its establishment, and it has proved successful and remunerative. And the Company has also striven to extend this trade, directing careful attention to the requirements of both passenger and goods traffic, its endeavors having succeeded to such an extent as to make its position pre-eminent in the western part of Japan.

Water transport business, which had been extremely depressed, began to revive from 1910, and as the traffic for goods increased on all the home lines the Company rapidly placed larger steamers on each of them also increasing the number of vessels. The following table shows the development of the Company during the thirteen years from 1904 to 1916:—

COASTING SERVICES.

Year.	Lines.	Miles.	Tonnage of Steamers.
1903	20	10,162	20,647
1916	25	14,601	49,726

ADJACENT SERVICES.

Year.	Lines.	Miles.	Tonnage of Steamers.
1904	21	23,196	42,704
1916	18	61,315	105,010

DEEP SEA SERVICES.

Year.	Lines.	Miles.	Tonnage of Steamers.
1904	—	—	—
1916	5	73,984	136,596

Since January, 1914, the extension and improvement in the Company's services brought about an increase in tonnage of 15,000; eight of the older steamers were sold, which were replaced by the same number of steamers with an aggregate tonnage of 26,000. In March, 1914, the capital of the Company was increased to Yen 24,750,000; the unpaid remainder of which was paid on 1st March, 1917.

Development After the Outbreak of the Great War

In August, 1914, diplomatic relations were broken off between Japan and Germany as a consequence of the Great War in Europe. The war now opened, and the Company, as in the previous wars, offered some of its steamers to the service of the Government. After a few months' engagement, the German possession of Tsingtau fell into Japanese hands. Thereupon, the Company quickly opened the new service between Osaka and Tsingtau in December of the same year. In the meanwhile the Company despatched two of their steamers to Europe as trial boats of the European line. But in quite another direction a new regular line was inaugurated by the Company. Upon the withdrawal of the San Francisco-Hongkong line by the Pacific Mail Steamship Company during the summer of 1915, the Company opened a new monthly service between Japan and San Francisco.

The year 1916 stands pre-eminent in the history of the Company. Three important deep sea lines were inaugurated. The South Seas service was opened early in the year between Keelung and Batavia with a view to rendering closer trade relations between Japan and those islands which are scattered among the South Seas. The Australian service was the next established line between Japan and Australia, with Adelaide as the terminal port, maintaining it with three steamers of 4,500-ton type. In addition to the above two lines, a new quarterly service was inaugurated in December, 1916, between Japan and South America; and the liners on this run consist of two 6,000-ton steamers; the steamers plying between Yokohama and reach Buenos Ayres by way of Hongkong, Singapore, Cape Town and Rio de Janeiro. The marvellous development in the shipping world induced the Board of directors to decide in January, 1917, to further increase the capital of the Company to Yen 50,000,000. Towards the end of the same year, with the intention of furthering facilities for co-operation with the Allies and on instructions from the Imperial Japanese Government, the *Java Maru*, the *Indo Maru* and the *Malay Maru*, three vessels with an aggregate tonnage of about 23,000 tons deadweight, were offered for the use of the United States of America.

The progressive policy of the O.S.K. adds for the year 1918 two of the most important advances in the world's shipping; one in the South European waters and the other around the Straits Settlements. The Marseilles-Bombay line was inaugurated in April, 1918, with three steamers, making a regular monthly freight service. This line, in conjunction with the existing Japan-Bombay line, forms a through trunk line between Japan, France and Italy.

Three local new services with Singapore as their terminus were started in June, 1918; they cover all the important trade routes in South Eastern Asia, namely, such routes as from Dutch East Indies, Siam, Burmah and Bengal district of British India to the port of Singapore, where all of the O.S.K.'s South American, South African, Indian and South Sea Islands services converge.

While the activity of the O.S.K. is thus extending into new fields, the Company is at the same time keenly alive to the situation in the shipping world, and is despatching extra boats to regular services, particularly to the Tacoma-Hongkong and Yokkaichi-Bombay lines. At the same time a great number of steamers are chartered by the Company to cope successfully with the increasing business. On the other hand, new steamers, which were ordered from several home shipyards, are being completed, and as they are delivered to the Company, these new vessels will be promptly put to service. Thus it will not be too much to say that, by consistently following the progressive policy, the Osaka Shosen Kaisha is coming into the rank of the largest steamship companies of the world.

The Present Position of the Company

With a capital of Yen 50,000,000 and 189 steamers representing over 446,500 tons, the Company is now conducting 46 domestic and foreign regular services. In 1917 the Company's steamers carried over 95,589,460 pieces of cargo and over 2,147,028 passengers, realizing a nett revenue of over Yen 36,114,514.

The total regular services conducted by the Company are 46 lines extending over 150,000 miles, consisting of the five deep sea lines, twenty-five coasting services and eighteen adjacent services.

Financial Position.—Following the Russo-Japanese war, the water transport business in Japan experienced a long spell of depression, but an improvement began to be noticeable in 1914, and the measures taken by the Company for an extension of its business were successfully accomplished, a marked increase having been shown in the profits during the past few years, while the general financial condition of the Company has shown a corresponding improvement.

The condition of revenue and expenditure for and after 1913:—

Year	Revenue	Expenditure		Net profit	Rate of dividend Per annum	Increase in the Reserve and the Amount carried forward,
		Working Expenditure	Cost of maintenance of steamers			
	Yen	Yen	Yen	Yen	Per cent	Yen
1913	20,184,189	13,595,030	3,352,000	3,237,158	10.0	1,794,589
1914	19,346,155	13,770,885	3,116,000	2,459,270	10.0	846,850
1915	23,603,626	15,795,874	3,787,000	4,020,752	11.0	2,348,305
1916	43,674,063	23,127,564	5,431,000	15,115,500	24.0	6,240,555
1917	72,457,210	36,342,656	7,075,000	29,039,555	45.0	27,532,712
1918 [1st half]	67,216,497	35,866,867	18,150,000	13,199,630	60.0	7,337,716

The increased revenue has resulted in an advance in the net profits and also an increase in the rate of dividend, which rose from 10 per cent. to 18 per cent. and then to 40, 50 and 60 per cent. successively, the reserve funds being increased by Yen 48,915,000 in about five years, until the total figures reached over Yen 50,710,000 at the end of first half of 1918, which corresponds to 40 per cent. of the amount of the paid-up capital.

Revenue.—As shown above, the revenue of the Company has materially increased during the past few years and the following average figures for every five years since the establishment of the Company indicate the steady increase in the revenue made:—

Year	Annual average revenue.	Revenue for freight.	Total tonnage of Steamers.
	Yen	Yen	
1884—88	842,941	807,720	14,462
1889—93	957,890	868,796	15,847
1894—98	2,350,237	1,581,217	30,053
1899-1903	5,368,746	3,854,896	58,802
1904—08	11,119,517	7,959,765	97,946
1909—13	16,114,666	12,605,367	150,680
1914—17	39,770,264	35,655,764	216,126

The marked increase shown in the revenue is the result of extensions of business effected by the great war, but in a large measure it is due to the sound development of profit-earning power.

Particulars of revenue may be seen from the following figures:

	1913	1914	1915
Income	Yen	Yen	Yen
from Freight	12,033,247	11,151,509	16,846,724
,, Passage money ...	3,916,213	3,790,004	3,594,797
,, Charter money received	225,070	627,248	306,693
,, Literage...	211,094	119,396	116,605
,, Mail Transportation received	135,977	133,018	124,512
,, Government navigation subsidies ...	2,575,092	2,470,712	1,700,294
,, Interest received ...	665,394	744,661	634,801
,, Miscellaneous receipts	422,156	309,598	279,199
Total...	20,184,189	19,346,155	23,603,625

	1916	1917	1918 (1st half)
	Yen	Yen	Yen
Income from Freight	35,964,381	62,224,643	61,215,732
,, Passage money ...	4,119,278	4,931,720	3,155,324
,, Charter money received	332,193	945,282	638,060
,, Literage...	136,602	132,626	69,270
,, Mail Transportation received	116,899	116,336	52,205
,, Government navigation subsidies ...	1,739,479	1,716,949	853,806
,, Interest received ...	867,136	1,888,938	982,315
,, Miscellaneous receipts	398,095	500,716	249,785
Total...	43,674,063	72,457,210	67,216,497

As indicated by the above figures, the proceeds from freight show a most substantial increase, being almost threefold in the five years under review, while the revenue from this source for 1917 represented about 86 per cent. of the whole revenue. Next come proceeds from passenger traffic which formed over 7 per cent. The percentage of the subsidy granted by the Government is comparatively small, representing about 2.3 per cent., and other items taken together are not more than a little over .4 per cent. The comparison between average of receipts from cargo and passenger traffic and of the Government subsidy for every five years since the establishment of the company is as follows:—

Year	Freight	Passage money	Government Navigation Subsidies	Percentage to total revenue Freight	Passage money	Subsidies	Other receipts
	Yen	Yen	Yen	Per cent	Per cent	Per cent	Per cent
1884—88 ...	353,796	454,927	—	41.8	54.0	—	4.2
1889—93 ...	435,488	413,308	—	45.5	43.2	—	11.3
1894—98 ...	851,257	725,958	189,532	36.2	30.9	8.1	24.8
1899-1903 ...	2,440,711	1,414,185	928,259	45.5	26.3	17.3	10.9
1904—08 ...	5,358,251	2,601,499	1,119,333	48.2	23.4	10.1	18.3
1909—13 ...	9,053,623	3.552,742	2,276,746	56.1	22.3	14.0	7.6
1914	11,151,509	3,790,004	2,470,712	57.6	19.6	12.7	10.1
1915	16,846,724	3,594,797	1,700,294	71.4	15.3	7.2	6.1
1916	35,964,381	4,119,278	1,739,479	82.3	9.5	4.0	4.2
1917	62,224,643	4,931,720	1,716,949	85.9	6.8	2.4	4.9
1918 ... ... (1st half)	61,215,732	3,155,324	853,806	91.0	4.7	1.2	3.1

For sometime after the establishment of the Company, the proceeds from passenger and cargo traffic were about equal, but the proportion of the former to the latter has gradually declined as foreign services have been extended since 1894, and now the passenger business has gone down below 13 per cent. It will thus be seen that a sound policy has been adopted by the Company from the outset. The Government subsidy was first granted in 1896 and its amount once reached as much as 17.3 per cent. of the total revenue (between 1899 and 1903). Subsequently the percentage declined gradually to about 10 per cent. as the revenue increased. On the opening of the American service in 1909, the percentage became greater again, and it increased to as high as 15.7 per cent. in 1911, after which year the rate declined once more, going down to 2.4 per cent. in 1917.

From the particulars above mentioned it may be seen that the Company's revenue has been placed on a solid basis, having steadily increased.

Expenditure.—With the added revenue, expenditure has gradually increased as may be seen from the following table:—

	1913 Yen	1914 Yen	1915 Yen
Steamer Expenses	5,640,271	6,090,573	6,581,204
Passenger Expenses	3,804,949	3,783,853	4,588,381
Office Expenses	1,477,024	1,495,515	1,695,001
Lighter Expenses	230,685	180,352	164,792
National and Local taxes ...	383,839	374,078	354,935
Charterage	1,239,231	1,242,619	1,832,642
Interest	524,785	506,712	489,778
Sundry Expenses	294,238	97,174	89,141
Total	13,595,030	13,770,885	15,795,874

	1916 Yen	1917 Yen	1918 (1st half) Yen
Steamer Expenses	8,012,185	10,597,210	9,280,205
Passenger Expenses	6,211,999	7,667,539	4,913,906
Office Expenses	1,893,165	2,413,039	1,315,702
Lighter Expenses	199.843	222,334	130,986
National and Local taxes ...	645,913	1,222,446	2,713,906
Charterage	5,495,369	13,279,819	12,247,903
Interest	481,964	489,221	157,906
Sundry Expenses	187,126	451,148	589,116
Total	23,127,564	36,342,656	31,349,630

The following comparative figures of revenue and expenditure show the sound progress made:—

Year	Revenue Yen	Expenditure Yen	Percentage of Expenditure to Revenue
1913	20,184,189	13,595,030	67
1914	19,346,155	13,770,885	71
1915	23.603,626	15,795,874	67
1916	43,674,063	23,127,564	53
1917	72,457,210	36.342,656	50
1918 (1st half)	67,216,497	31,349,630	46

As the steamers increased in number, the expenditure for maintenance also increased and the amounts set aside for the expenditure for the last six years being as follows:—

Year	Reserve for Insurance	Reserve for Repair to vessels	Total	Reserve for depreciation of steamers	Special Depreciation of New vessels	Grand total
	Yen	Yen	Yen	Yen	Yen	Yen
1913	908,000	1,089.000	1,997,000	1,335,000	—	3,352,000
1914	819,000	1,093,000	1,912,000	1,204,000	—	3,116,000
1915	1,036,000	1,243,000	2,279,000	1,508,000	—	3,787,000
1916	1,666,000	2,109,000	3,775,000	1,656,000	—	5,431,000
1917	2,235,000	2,971,000	5,206,000	1,869,000	—	7,075,000
1918 (1st half)	2,440,000	2,930,000	5,370,000	1,580,000	6,500,000	13,450,000

These amounts have been set aside out of profits at certain specific standard rate to the value of vessels, and the amount so set aside does not agree to that expended. The amounts actually defrayed out of the reserve set aside for this purpose in five years are as under :—

Year	Actual amount defrayed out of the Insurance Reserve	Actual amount defrayed out of the Repair Reserve	Total	Total amount of Reserve set aside out of profit	Balance
	Yen	Yen	Yen	Yen	Yen
1913	617.790	932.771	1,550.561	1.997.000	446,439
1914	614,865	1.048,277	1,663,141	1,912,000	238,859
1915	677,764	1.030,298	1,708,062	2,279,000	570,938
1916	810,251	1,743.438	2,553,689	3,775,000	1,221,311
1917	1.341,986	2.670.910	4,012,896	5,206,000	1,193,104
1918 (1st half)	2,144,362	2,743,038	4,887,400	5,370,000	482,600

It will be seen that the balance in the amount set aside for the maintenance of steamers showed an increase of over Y.746,665 in the five years under review.

Profits.—While a substantial increase has been made in revenue, expenditure has shown a progressive decrease, thus allowing a material increase in profits, which exceeded Y.36.115,000 for 1917. This amount left a net profit of over Y 29.034.000, equal to 116 per cent. of the paid-up amount of capital, after deducting Y.1.869,000 (a little over 5 per cent. of the original cost of vessels) for depreciation and Y.5.206,000 (a little over 9 per cent. and 12 per cent. respectively of the present book-value of vessels) for insurance and repairs. The following figures show the average amount of revenue, expenditure, etc., for every five years since the formation of the Company:—

Year	Revenue	Expenditure	Profit	Reserve for depreciation of steamers	Reserve for Insurance and Repairs	Net profit	Percentage of Net profit to the paid-up capital
	Yen	Yen	Yen	Yen	Yen	Yen	Per cent.
1884—88	842,941	701,809	141,132	55,070	21,647	64,415	5.1
1889—93	957,890	700,810	257,080	69,400	123,221	64.459	4.5
1894—98	2,350,237	1,524,281	825,956	94,000	377,382	354.574	10.4
1899-1903	5,368,746	3,723,057	1,645,689	327,800	670,300	647,589	11.8
1904— 8	11,119,517	8,646,416	2,473,101	511,800	1,141,800	819,501	6.5
1909—13	16.114,666	11,394,316	4,720,350	1,104,600	1,674.000	1,941,950	11.8
1914—17	39,770,264	22,259,245	17,511,019	3,559,250	3,293,000	10,658,769	51.0

The average net profit for the last five years was 51 per cent. of the paid-up capital, and the Company has been placed on a stronger foundation. In the figures given above the reserve for insurance and repairs to steamers was taken so expenditure and the net profit was computed accordingly, but the actual amount defrayed for the purpose was generally a small portion, the remainder forming a part of the net reserve. This method applied to the redemption of the cost of steamers. In the past few years an amount equal to a little over 5 per cent. of the original value has been set aside yearly for depreciation. But the rate adopted by the Company is 4 per cent., which will pay back the original cost of steamers in 25 years. Taking the amount set aside at the rate of 4 per cent. of the cost ever since the formation of the Company and deducting the net amount paid for insurance and repairs, the net profit during the period under review was as follows:—

Year	Profit	Reserve for depreciation of steamers	Actual Amount paid for Insurance	Actual Amount paid for repair to steamers	Net profit	Percentage of net profit to the paid-up-capital
	Yen	Yen	Yen	Yen	Yen	Per cent
1884—88	141,132	55,070	—	19,512	66,550	5.2
1889—93	257,080	67,722	12,310	89,293	87,755	6.1
1894—98	825,956	124,960	77,711	195,637	427,648	12.5
1899-1903	1,645,689	312,560	320,919	344,214	667,996	12.1
1904—08	2,473,101	545,000	409,857	642,612	875,632	6.9
1909—13	4,720,350	920,000	587,890	818,563	2,393,902	14.5
1914—17	17,511,019	355,925	861,716	1,623,231	10,658,769	51.0

From the above figures it may be seen that the annual net profit for the five years under review was 51 per cent. of the amount of the paid-up capital, the percentage increasing to 104 per cent. for 1917. This is the most potent fact as indicating the progress made by the Company. The balance of the amount annually set aside out of profits for insurance and repairs has accumulated to a considerable sum. The balance left in reserve for insurance at the end of June, 1918 stood at over Y.4,354,228 and the balance in reserve for repairs over Y.1,916,620. These balances—added to the general reserve amounting to over Y.14,304,000, the reserve for equalization of dividend totalling over Y.8,000,000, the reserve for business extension fund, Y.8,000,000 and Y.12,048,668 recently set aside as reserve for adjustment of value of fleet, Y.1,000,000 reserve for building offices—amount to over Y.49,623,516. Adding to this a surplus of Y.1,085,000, carried forward in the account of the last period, the total reserve funds now held by the Company amount to over Y.50,709,000. The following figures show the rate of increase made in the reserve since the establishment of the Company:—

Year	Reserve for the Insurance of steamers	Reserve for repairs to steamers	General Reserves	Reserve for the equalization of dividend
	Yen	Yen	Yen	Yen
1888	10,676	—	—	—
1893	224,659	—	3,142	—
1898	740,292	4,534	94,000	—
1903	672,195	98,465	257,600	—
1908	911,910	305,400	465,600	—
1909	1,015,828	343,960	522,800	—
1910	1,041,615	399,210	585,300	—
1911	1,141,802	524,982	688,940	—
1912	1,459,255	650,353	796,440	1,500,000
1913	1,749,456	806,581	958,940	2,000,000
1914	1,951,591	851,305	1,082,440	2,500,000
1915	2,309,827	1,064,007	1,283,940	2,500,000
1916	3,165,576	1,429,568	2,039,940	4,000,000
1917	4,058,591	1,729,658	13,418,000	6,500,000
1918	4,354,228	1,916,620	14,304,000	8,000,000

(1st half)

Year	Reserve for business extension fund	Reserve for adjustment of value of fleet	Reserve for building offices	Amount brought forward	Total
	Yen	Yen	Yen	Yen	Yen
1888	—	—	—	—	10,676
1893	—	—	—	1,243	229,045
1898	—	—	—	11,315	850,141
1903	—	—	—	282,060	1,310,321
1908	—	—	—	342,210	2,025,121
1909	—	—	—	374,537	2,257,126
1910	—	—	—	500,038	2,526,164
1911	—	—	—	1,101,860	3,457,586
1912	—	—	—	125,904	4,531,952
1913	—	—	—	888,062	6,403,041
1914	—	—	—	864,533	7,249,869
1915	2,000,000	—	—	444,000	9,601,774
1916	4,000,000	—	—	1,203,645	15,838,729
1917	6,500,000	9,048,668	—	2,116,524	43,371,441
1918	8,000,000	12,048,668	1,000,000	1,085,641	50,709,157

(1st half)

Working Fund.—The amount of capital now paid up is Y.31,062,500, which, added to the loan in debentures—Y.3,500,000—brings the working fund of the Company up to Y.34,562,000. This is in addition to reserve fund and the surplus, amounting to Y.50,709,157.

The fluctuations of the capital and debenture loans from the time of the establishment of the company may be seen from the following figures:—

Year	Paid-up capital	Debenture loan	Total	Reserves and surplus brought forward
	Yen	Yen	Yen	Yen
1884	1,048,715	—	1,048,715	7,652
1888	1,350,000	—	1,350,000	10,676
1893	1,800,000	—	1,800,000	229,045
1898	5,500,000	—	5,500,000	850,141
1903	5,500,000	4,500,000	10,000,000	1,310,321
1908	16,500,000	3,500,000	20,000,000	2,025,121
1913	16,500,000	7,100,000	23,600,000	6,403,041
1914	18,562,500	6,780,000	25,342,500	7,249,869
1915	18,562,500	6,460,000	25,022,500	9,598,174
1916	20,625,000	5,500,000	26,125,000	15,838,729
1917	31,062,500	3,500,000	34,562,500	43,371,441
1918	31,062,500	3,500,000	34,562,500	50,709,157

(1st half)

Property of the Company.—The following is the balance-sheet compiled on the 30th of June, 1918:—

ASSETS.

	Yen
Unpaid-up capital	18,937,500.00
Value of fleet	37,325,318.36
,, ,, lighters	490,585.73
,, ,, land and buildings	4,412,382.00
,, ,, instruments	82,364.59
Negotiable instruments	14,309,791.10
Stores account	518,665.35
Coal account	229,529.89
Part payment of the price of vessels	7,420,620.35
Various part payments	63,626.84
Provisional payments	1,854,849.08
Reserves against vessels, etc.	73,917.28
Loans	252,792.63
Deposits	37,983,998.39
Freight receipts due	567,579.57
Navigation subsides and other accounts receivable from the Government	229,644.19
Insurance money due	392,832.22
Cash in hand	221,852.07
Total	125,567,850.14

LIABILITIES.

	Yen
Share capital	50,000,000.00
Debentures	3,500,000.00
Reserve for insurance of fleet	4,354,228.70
,, ,, repairs to fleet	1,916,620.66
Reserve fund	13,418,000.00
Fund for adjustment of value of fleet	9,048,668.87
Reserve for equalization of dividends	6,500,000.00
Reserve for extension of business	6,500,000.00
Fund for allowance to retiring land and marine employees	1,500,000.00
Fidelity and reserve funds	1,363,789.30
Provisional receipts	1,522,894.78
Cost of goods bought and not paid for	149,312.37
Amount outstanding on redeemed debentures	83,200.00
Debenture interest outstanding	22,600.74
Outstanding dividends	30,154.28
,, tax on war profits	4,700,000.00
Accounts of Branch Offices and Agencies	1,124,988.74
Amount brought forward from the last term	2,116,524.74
Net profit	17,716,866.36
Total	125,567,850.14

DIVISION OF PROFIT.

	Yen	Yen
Profit during present term		35,866,866.90
To fleet insurance account	2,440,000.00	
,, ,, repairs account	2,930,000.00	
Written off for depreciation of fleet...	1,580,000.00	
,, ,, ,, special depreciation of new vessels	6,500,000.00	
Appropriation for tax on war profits	4,700,000.00	
Net profit		17,716,866.96
To reserve fund	886,000.00	
,, bonus to staff	443,000.00	
Balance		16,387,866.96
Amount brought forward from previous term...		2,116,524.74
Total		18,504,391.70
To fund for adjustment of value of fleet	3,000,000.00	
,, business extension fund	1,500,000.00	
,, fund for equalization of dividend...	1,500,000.00	
,, ,, ,, building offices	1,000,000.00	
,, dividend to shareholders (10 per cent. per annum)	1,553,125.00	
,, extra dividend to shareholders (50 per cent. per annum)	7,765,625.00	
,, fund for allowance to retiring marine and land employees ...	500,000.00	
,, special allowance to marine and land employees	600,000.00	
Amount carried forward to coming term		1,085,641.70

Craft.—Vessels, including launches, lighters, and the bargain money paid on account of new steamers form the most important portion of the Company's property, representing 30 per cent. of its total value. In considering the assessed value of the property it is necessary to note the amount set aside each period for depreciation. The Company's standard rate for redeeming the value of vessels is 4 per cent. of the value, which cannot be regarded as small. In the past few years the rate has been increased to a little over 5 per cent., and the value has been redeemed over and above the standard amount Y.6.500,000 recently set aside as the special depreciation of new vessels.

The following figures represent the average tonnage and value of each vessel for the past five years. It may be seen from them that while the size and cost of vessels have increased the assessed value has decreased yearly by the redemption of the cost:—

Year	Number of steamers	Tonnage	Average tonnag each vessel	Value of steamers	Average value per ton
1909	108	122,446	1,131	14,819,931	121.33
1910	108	135,325	1,253	16,678,282	123.25
1911	108	149,937	1,388	17,400,942	116.11
1912	108	169,081	1,566	18,305,394	108.26
1913	109	176,913	1,632	17,805,749	100 65
1914	109	191,204	1,753	18,575,436	97.15
1915	106	210,346	1,984	22,377,277	106 39
1916	109	213,150	1,956	20,276,014	90.89
1917	117	249,802	2,135	36,104,708	144.53
1918 (1st half)	118	271,596	2,302	37,325,318	137.43

The next important point to be considered in regard to the craft is the condition of repair. The total amount paid in the past five years for the repair of vessels comes to over Y.7,225,000, as undermentioned:—

Year	Value of steamers	Amount paid for repair of vessels	Percentage of the amount paid for repair to the value of steamers
1909	14,819,931	675,439	4.7
1910	16,678,282	773,750	4.6
1911	17,400,942	746,287	4.3
1912	18,305,994	764,629	5.2
1913	17,905,749	732,771	5.2
1914	18,575,436	1,048,271	5.6
1915	22,377,277	1,030,298	4.6
1916	20,276,014	1,743,438	8.6
1917	36,104,708	2,670,910	7.0
Average	23,047,837	1,603,176	7.4

The Company covers with insurance companies the larger steamers of great value, and smaller steamers of less value are covered by means of self-insurance. Of the Company's fleet, 74 steamers with an aggregate tonnage of over 250,000, are insured with Lloyd's and other leading Insurance Companies. The Company holds a reserve fund of over Y.4,350,000 for insurance on its ships, with which 44 smaller steamers representing 21,500 tons are thus insured, this fund being used for making good any damage which is not recoverable from the insurance companies. In this way full provision is made against any serious sea casualties and the Company's floating property is in reality safe. It may be mentioned that the Company is strictly enforcing the redemption of the value of ships on one hand, while on the other hand sparing no effort to maintain the efficiency of its fleet. The market value of the ships of the Company's fleet far surpasses the value assessed on the balance sheet.

Land and Buildings.—Land owned by the Company covers 63,517 *tsubo* and building area thereon 16,469 *tsubo* value Y.4,412,382. The value of land is put down at the time the property was purchased many years ago and has never been reassessed. The land owned by the company for the most part is located in the most prosperous district near the sea front at the various cities, and in every case a great advance has been made in price since the property was purchased. When the property is put down at the current market price, a profit of over Y.3,000,000 can be realized from the difference. The value of buildings was put down at the original cost at the time they were built or purchased, and the value has been annually depreciated by setting aside a certain specific percentage from the profits.

Bonds and Other Securities.—The value of bonds and other securities held by the Company is put down on the books at over Y.14.309.791, which represents the value paid by the Company, and the figures are much lower than the current market prices.

Figures for Last Half of 1918

In the six months ending December 31, 1918, the steamers carried freight which netted over Y.87,000,000 and passengers who paid over Y.3,000,000.

Following is the profit and loss account:—

Dr.	Yen.
Ships' expenses	14,700,065.76
Passenger and cargo expenses	5,571,236.57
National and local taxes	1,908,257.95
Charter money paid	24,149,431.76
Lighterage paid	186,520.60
Office expenses	2,453,067.59
Interest paid	164,197.22
Difference in foreign exchange	12,000.69
Depreciation of buildings, lighters, etc. ...	169,218.94
	49,313,997.08
Reserve for insurance on fleet	2,191,000.00
Reserve for repairs to fleet	3,407,000.00
Depreciation of fleet	1,781,000.00
Extra depreciation of new ships	16,000,000.00
Appropriation for income-tax on war profit...	3,470,000.00
	26,849,000.00
Net Profit	24,491,945.51
Total	Y.100,654,942.59

Cr.	Yen.
Freight	87,803,966.19
Passage money	3,367,611.85
Charter money received	6,147,137.43
Lighterage received	47,446.35
Interest received	2,119,428.32
Miscellaneous receipts	281,202.09
Government navigation subsides	833,772.99
Mail transport receipts	54,377.37
Total	Y.100,654,942.59

Grand Canal Improvement Contract: Seven Percent Gold Loan of 1917

[The following agreement for the loan for the improvement of the Grand Canal was released for publication by the Chinese Government on March 18. Summaries of the previous agreement have already appeared in the Far Eastern Review.]

(Translation from Chinese.)

The Chinese Government, for the improvement of the Grand Canal in Shantung and Chihli Provinces, to make a public loan for said purpose, and to provide for financing further improvement if necessary, finds the following necessary to be enacted by the Parliament of the Republic of China and to be sanctioned by the President of the Republic of China before this agreement becomes effective:—

Whereas, the Chinese Government considers the Grand Canal work in Shantung and Chihli provinces as a part of national conservancy work, to wit, the improvement of that part of the Canal commencing at Pangchiakou and Lanhuangpa in the North and ending at Weishanhu and Taierhchwang in the South, such extensions as may be required, work in connection with the valleys of the Yen and Sou Rivers, the Po River and marches and other tributaries of the main Canal, and the improvement of the Lands thus reclaimed; and on the date that this agreement becomes effective the agreement executed between the Province of Shantung and the American International Corporation dated April 19, 1916, is to be cancelled.

And Whereas, an extension of the work is now provided for which shall extend the North section of the Grand Canal from Taochenpu on the Yellow River to Tientsin viâ Linching and Tehchow, and improve such extensions and tributaries of the main Canal as may be required:

Therefore, The Directorate General of Flood Relief and Conservancy is hereby authorised and empowered to enter into the following agreement, with the American International Corporation and all officers mentioned therein are authorized and empowered to perform the several acts therein stipulated to be done by them:—

ARTICLE I.

AGENT—LOAN—NAME.

1.—For the exclusive purpose of financing the improvement work in Shantung and Chihli provinces above mentioned, the Government authorises the Corporation as its agent to issue a gold loan of Six Million Dollars United States Gold Currency (G $6,000,000) on the terms and conditions hereinafter set forth. This loan shall be called the Chinese Government Grand Canal Improvement Seven Percent (7 per cent.) Gold Loan of 1917.

OBLIGATION.

2.—This loan and all advances made hereunder shall constitute a direct liability and obligation of the Government, which hereby pledges its good faith and credit for the punctual payment of the principal and interest of the loan and for the performance of all undertakings on its part herein assumed.

COST OF BONDS—SIGNATURE—COUNTER SIGNATURE.

3.—The denomination, wording, design, and designation of the currencies of the bonds shall be determined by the Corporation, and all expenses incurred in connection therewith shall be borne by the Corporation, but the cost of engraving and printing the bonds shall be borne by the Government, which shall furnish a facsimile of the signature of the Minister of Finance and the seal of the Ministry of Finance to be engraved on the bonds. The Chinese Minister in Washington shall, previous to the issue of the bonds, also furnish a facsimile of his signature and official seal to be engraved on the bonds to signify that said bonds are the binding obligation of the Government.

ISSUE PRICE—AGENT MAY PURCHASE. FUTURE ISSUES.

4.—The aggregate amount of the first issue of the bonds shall be for Six Million Dollars United States Gold Currency (G. $6,000.000), at Ninety Percent (90 per cent.), and shall be made en bloc or in series. Nothing herein contained shall prevent the Corporation purchasing all or any part of said bonds itself. Should the funds of this loan not be sufficient for the work the American International Corporation will be applied to for a further issue of bonds on terms to be agreed upon. The time of issue and amount of any and all bond issues hereunder, and provisions for advances and temporary financing, shall be determined by the Corporation in consultation with the Government.

ISSUE EXPENSES.

5.—All expenses in connection with said Six Million Dollars (G £6.000,000) bonds taken by the Corporation hereunder, or for such portion of future issues as may be taken by the Corporation, such as bankers' commissions, flotation charges, shall be borne by the Corporation.

ADVANCE.

6.—Immediately upon this loan agreement becoming effective, the Corporation will set aside an advancement to the Government to provide for the preliminary expense of the work pending the bond issue herein referred to.

TIME OF ISSUE—TEMPORARY FINANCING.

7.—The Corporation in consultation with the duly authorized representative of the Government shall decide what is the most favourable moment for the issue of bonds and the duly authorized representative of the Government will give the necessary instructions to the Chinese Minister in Washington. If at such times so determined the issue of such bonds on the terms named herein or agreed upon would be impossible, then in such case the Government and the Corporation shall agree upon a mutually satisfactory plan of temporary financing under an agreement to be negotiated at the time.

FORCE MAJEURE—EXTENSION OF TIME—TEMPORARY FINANCING.

If, however, subsequent to any agreement having been reached for the Corporation to issue bonds hereunder and before the publication of the prospectus for such issue or for any series thereof, any political or financial crisis should arise affecting the money markets or the price of Chinese Government securities so as to render impossible in the opinion of the Corporation the successful issue of the bonds at the time agreed upon, then the Corporation upon consultation with the Government respecting the period of the time shall be granted a reasonable extension for the performance of its contract. If, within the time limit to be arranged, the issue of Chinese bonds on the conditions herein before stated should be impossible as aforesaid, then the Government and the Corporation shall agree on a mutually satisfactory plan for temporary financing to provide, as far as possible, for the uninterrupted continuance of construction.

CONCLUSION—REPAYMENT OF BONDS AND ADVANCE.

8.—Under extraordinary circumstances, should the bond issue or temporary financing or advancing be impracticable, and/or in case the Corporation has made previous advances and/or bond issues and then is unable to make further advances after one (1) year, this loan may be declared concluded and the Government will repay the advances, if any and/or bond issues, if any, together with the legitimate interest within three (3) months, after which the contract shall become null and void.

SUPPLEMENTARY DETAILS.

9.—All details of the prospectus for the present issue and other issues, and of loan service, not provided for specifically herein shall be arranged by the Corporation in consultation with the Chinese Minister at Washington.

Article II.

Interest Rate Commences—Periods on Unused Funds.

1.—The rate of interest for the present issue shall be Seven Percent (7 per cent.) per annum computed from the dates of the bonds, which dates shall be the dates of issue. It shall be paid semi-annually in the manner hereafter provided. Unused funds on fixed deposit in China with the International Banking Corporation shall bear interest at current rates, and the unused balance deposited in America shall bear interest at the rate of Two Percent (2 per cent.) per annum.

Proceeds Conservancy Account—Transfer Bank Fixed Deposit in China.

After the appointment of a Director-General for this work, the Corporation will place said advancement and after issue or issues of bonds the proceeds thereof, to the credit of the Grand Canal Conservancy Account, to be tranferred to China in necessary instalments from time to time through and to be held on deposit in China with the International Banking Corporation pending their transfer to the works. When, after the appointment of the Director-General and the Chief Engineer, it shall be possible to proceed with improvement work, there shall be transferred to the International Banking Corporation at Tientsin or Shanghai and put to the credit of the Grand Canal Conservancy Account a sum sufficient to meet six (6) months' estimated expenditure in advance, which sum shall be determined by the chief Engineer in consultation with the Contractors and submitted to the Director General for approval, and shall be maintained by subsequent monthly transfers so that so far as possible there will always be six (6) months' estimated expenditure in China on deposit with the International Banking Corporation.

Working Funds.

3.—Working Funds transferred to the works shall be deposited in and operated through some responsible bank in China designated by the Government.

Exchange Adjustment.

4.—The cost of all transfers of all funds of whatsoever nature to, from and in China shall be borne by the Government and included in the rate of exchange to be settled either on the date of transfer or prior thereto as mutually agreed upon between the Government and the International Banking Corporation.

Disbursement—Dir.-Gen. Requisitions Construction Funds—Dir.-Gen. C. Eng. Approve Expense According to Plan. Custody of Hd. Wks. Bu. Fund General Expense Budget.

5.—The Government shall as at all times during construction keep the contractors in funds to meet expenses under this contract: and the contractors shall, not less than seven (7) days before the end of each month furnish the Director-General with a lump sum requisition showing the amounts required to be expended for all purposes of the contract work during the then ensuing month. Such requisitions shall be paid by the auditors to the Contractors with any balances then in the hands of the Contractors not then expended, after they have been approved by the Chief Engineer and signed by the Director General to signify his approval. Thereupon the Contractors shall expend the same only in accordance with the plan prepared and agreed upon as stipulated in Article VI. Funds for the general expense of the Head Works Bureau hereinafter referred to shall be held by the accounting department of the Head Works Bureau. A budget of the general expense for each ensuing month shall be agreed upon by the Auditor and Contractor and disbursed by the Auditor upon requisitions approved and signed by the Director General.

Accounts—Access to Accounts.

6.—The Canal Road Works Bureau and Canal Conservancy Bureau and Contractors shall at all times keep proper and correct books in English, showing all transactions of income and expenditure in detail and by items, and both parties shall always have access to and the right to inspect such accounts.

Article III.

Terms and Amortisation. Redemption. Drawings. Trustee. Table, Place of Payments, Cancellation of bonds, Interest Ceases.

1.—The term of this present issue shall be Twenty (20) years. This issue shall be redeemed in Fifteen (15) equal, annual instalments, dating from the expiry of the fifth year of the issue, by drawings which shall be held in New York at the National City Bank of New York, which is hereby appointed trustee for the bondholders in conformity with the Amortisation Table annexed hereto. The serial numbers of bonds drawn shall be published in Four (4) daily newspapers at the cost of the Corporation. All interest and amortisation payments shall be made in gold by the National City Bank, and at such places as may be designated by it in such public notice. Bonds presented for payment must be surrendered together with their proper coupons if any. Interest on drawn bonds ceases on the day of drawing.

Trustee's Commission Payable.

2.—For reimbursement in connection with the payment of interest and repayment of principal of the loans the National City Bank of New York shall receive a commission of one quarter of one per cent. (¼ per cent.) from the Government on the annual loan service, such commissions to be paid half yearly simultaneously with the interest payments and repayments of principal in accordance with the Amortisation Table hereto annexed.

Forced Redemption. Premium. Notice Cancellation of Bonds.

3.—If after five (5) years from the respective dates of these loans the Government should desire to redeem the whole or any portion thereof not then redeemed it may do so by paying an addition of one and one-half per cent. (1.5 per cent.) on the par value of the bonds not then redeemed. But in each and every case of such extra redemption the Government shall give six (6) months' previous notice in writing to the Trustee and such extra redemption shall be effected by additional drawings, as provided for in the prospectuses of the loans. The redeemed bonds and interest coupons, if any, will be received and cancelled by the Trustee when they shall be presented for payment at the place designated by the Trustee.

Loan Service Account. Special Revenue Account. Payments due. Deficiency Supplied. Stamp Duties. Minimum.

4.—A Loan Service Account shall be established and maintained in the International Banking Corporation, Peking, during the life of the loan subject to the order of the Auditor. In this account shall be deposited from the Special Revenue Account hereinafter referred to Fifteen (15) days before each due date, amounts in silver sufficient to meet the interest and amortisation payments in gold dollars in New York, or in gold of the national currency of such other places as may be designated by the Trustee, which shall be transferred to the place of payment through the International Banking Corporation. If the funds of the Special Revenue Account should be insufficient, the deficiency will be made up by funds transferred from the Stamp Duties, or in defect thereof from other sources. Said Loan Service Account shall at all times be sufficient in amount for six (6) months use.

Article IV.

Security.

1.—This loan and all advances and temporary financing are hereby secured by:—

Government Land Proceeds.

(*a*) The lands to be reclaimed by the work done hereunder owned by the Government, which the Government declared to be approximately Three Hundred Thousand (300,000) mow: and all revenues derived or to be derived by the Government from the Government lands affected by the work: also all proceeds from the sale, lease and/or taxation of all reclaimed and/or improved lands as well as any special taxes which may be levied by the Government on lands benefited by this work.

Affected Land Revenues.

(*b*) All taxes derived or to be derived from all other lands affected by this improvement, which the Government estimates to be an approximate area of Five Hundred Thousand mow (500,000.)

Area To be Mapped.

The Government hereby certifies that the estimated area of the above named districts amounts approximentely to Eight Hundred Thousand (800,000) mow, and area is to be confirmed by a map after an actual survey and furnished by the Corporation.

Canal Revenues.

(*c*) All tolls and taxes derived or to be derived from the section of the Grand Canal improved under this contract, during the life of this loan.

Property Purchased and Built.

(*d*) All property purchased or constructed with loan funds.

Warranty Priority.

2.—The foregoing property and revenues are not now pledged for any other loan or financial obligation: and so long as this loan or any part thereof shall remain unredeemed, it shall have priority both as regards principal and interest over all future loans and obligations charged thereon and said security shall not be impaired or injured by taxes, likin, imposts, royalties, or in any other manner.

Collection and Disbursement of Revenues By Hd. Wks. and Conservancy Release.

3.—All receipts in connection with the securities above mentioned shall be handled by the Head Works Bureau during construction and by the Conservancy Bureau hereinafter mentioned, during the remainder of the life of the loan, and shall be transferred by the Bank of China if practicable, to be deposited in a special Revenue Account in the International Banking Corporation, Peking, Shanghai and/or Tientsin pending transfer to Loan Service Account as above mentioned on the order of the Auditor to meet payments due for interest and amortisation. After providing for said Loan Service Account, any surplus left from said receipts shall be used first for the maintenance of the canal which shall be maintained in good condition, and, second, to be placed at the disposal of the Government.

Deficit and/or Maintenance Funds Assured.

4.—Should the revenue herein pledged be insufficient to meet the amount required for interest, amortisation, loan service, exchange, maintenance of the Canal, or any other obligation of this contract, the Government hereby agrees to make up the deficiency from other sources and among them specially allocates for this purpose a sufficient portion of the stamp duties levied by virtue of an Act promulgated on October 21, 1912, called the "Yin Hua Shui" as a reserve fund which is free from all encumbrance excepting a pledge of Five Hundred Thousand Dollars (py, $500,000) local currency which is set aside as a reserve fund secondary to the Deeds Tax for a Domestic Loan and during the life of this loan nothing shall be done with respect to the Stamp Duties which will in any way impair the value or safety of the reserve fund hereby provided.

Article V.

Contractors Purchases: Commission Payable Monthly Requisition Approved by Dir.-Gen. and Auditor.

1.—The Siems-Carey Railway and Canal Co., is hereby recommended and accepted as the Contractor for the work of improvement of the Grand Canal provided for under this contract. It shall have charge and control of everything in connection with the engineering and construction work, shall perform the same efficiently, economically, and speedily according to plans made by the Chief Engineer and approved by the Director General who shall send them to the contractors for their approval and execution; shall make all purchases, carefully storing, protecting, and issuing for use all purchases during construction and shall receive as their sole remuneration a sum equal to ten per cent. (10) of the total amount expended for all purposes including head office expenses, as profits, which sum shall be paid to the Contractors in monthly payments at the end of each month's work, requisitions therefor being based on accounts approved by the Auditor and submitted to the Director-General for his approval and signature.

Protection.

2.—The Government will provide sufficient protection for the work and all properties of the Contractors and/or Corporation as well as for Chinese and foreigners employed thereon.

Materials.

3.—In the purchase of materials preference shall be given to Chinese materials when price and quality are at least equal: otherwise American materials and machines may be used when the price does not exceed the price of the same quality in other foreign markets.

Imports.

4.—All necessary imports for the purpose of this improvement shall be exempt from duties, taxes and imports.

Time.

5.—The work on the Shantung section shall be completed within thirty (30) months from the date of payment of the first estimate to the Contractors, unless delayed by some unforeseen occurrence.

Article VI.

Director; Head Works and Conservancy Bureaux.

1.—The Director-General is hereby appointed by the Government and acts as its representative respecting the work to be done hereunder. He shall upon the commencement of this work, establish at Tsi-ning-hsien, and maintain there or at such other place as may be convenient, a bureau known during construction as the Head Works Bureau and afterwards during the life of the loan as the Canal Conservancy Bureau. In this Bureau there shall be three (3) responsible departments, viz.:—

General Affairs Dept.

(1) A General Affairs Department with an officer in charge appointed by the Director-General. This department shall take charge of all work in connection with miscellaneous affairs.

Engineering Department, American Chief, Chinese Chief.

(2) An Engineering Department in charge of an American Chief Engineer during and until completion of construction, and afterwards during the life of any and all bonds, in charge of a Chinese engineer.

Employment by Dir.-Gen. Corporation Nominees.

Both Engineers shall be appointed, removed, and/or replaced by the Director-General upon consultation with and/or upon the recommendation of the Corporation and shall always be persons nominated by the Corporation and whose professional reputation and experience are first class.

Chief Engineer Inspector Plans. Director-General. Performance of Work. Chief Engineer and Dir.-Gen. Approve Requisition.

During construction the said American Chief Engineer shall be the Inspector and Consulting Engineer of the Government for this work. He shall, with the approval of the Contractors, make all plans of improvement and drainage contemplated. If the work planned appears not feasible or the cost not reasonable to the Contractors, the Director-General will cause the plans to be revised to make them feasible and the cost reasonable as aforesaid. The work must be performed to the satisfaction of the Chief Engineer, and he shall have power to refuse his approval to lump-sum requisitions until he is satisfied that the work is or will be performed according to the plans above specified. The Director-General's approval and signature must be obtained by the Chief Engineer on all lump-sum requisitions of the Contractors. The Director-General or his representative shall have full powers of inspection of the work at any time. Upon completion of the Canal improvement work, the Chinese Chief Engineer will supervise the maintenance of the Canal, which shall be maintained in good condition.

ACCOUNTS DEPT. AMERICAN AUDITOR: DIR.-GEN. EMPLOYS AMERICAN. DUTIES. COLLECTIONS.

(3) An Accounts Department in charge of an American Auditor, appointed, removed, and/or replaced by the Director-General upon consultation with and/or upon the recommendation of the Corporation, and who shall always during the life of the loan be an American nominated by the Corporation.

TRANSFERS: PAYMENT.

This Auditor shall have charge of all the receipts and disbursements in connection with the fulfilment of this agreement and shall supervise the collection of the revenues pledged excepting the Stamp Duties during the life of the loan. He shall attend to the transfer of funds, to, from and in China. He shall make all withdrawals of loan funds: but only upon requisitions bearing the proper signatures herein provided for. He shall as herein stated, handle the payment of the interest and amortisation charges, the payment of maintenance and operating costs, and turn over the balance of the revenue above the amount required to be kept in the Loan Service Account to the Government.

(2) Should the American Auditor have suggestions to make regarding the revenues he may lay them before the Director-General who shall, if they are practicable, put them into execution.

ADVISORS.

3.—The subordinate officer shall be appointed in any of the said departments until after the approval of the Director-General has been secured.

4.—Should the Government desire to engage advisers relating to the reclaiming of land, managing reclaimed land, and developing the communication facilities of the Grand Canal, it will request the Corporation to recommend suitable persons for approval and appointment.

SALARIES.

5.—The salaries of the Chief Engineer and Auditor shall be arranged between the Director-General and the Corporation.

ARTICLE VII.

BREACH. MARITIME CUSTOMS.

1.—If there shall be a breach of this agreement, then all the revenues pledged as security shall, upon request of the Corporation, be transferred to and administered by the Corporation or the Maritime Customs in the interest of the bondholders.

ARTICLE VIII.

LOST BONDS. ADVERTISEMENT DUPLICATES, EXPENSES.

1.—In the event of any bond or bonds issued by this loan being lost, stolen, or destroyed, the Corporation may notify the Chinese Minister at Washington who shall authorize the Corporation to insert an advertisement in Four (4) newspapers stating that the payment of such bond or bonds had been stopped, and to take such other steps as may appear advisable or necessary according to the land and customs of the country concerned. Should any bond or bonds be destroyed, or should such lost or stolen bond or bonds not be recovered after a lapse of time fixed by the Corporation, the Chinese Minister at Washington shall execute a duplicate bond or duplicate bonds for a like amount and deliver the same to the Corporation, representing the owner or owners of such lost, stolen or destroyed bond or bonds, which Corporation shall pay all expenses in connection with such delivery and execution of such duplicate bond or bonds for the account of the owner or owners of such bond or bonds.

EXEMPTION FROM TAXES.

2.—All bonds, coupons, and payments made and received in connection with the service of this loan shall be exempt from all Chinese taxes and imposts during the currency of this loan.

ARTICLE IX.

PLACES OF ISSUE.

1.—Of the six million dollars (G.$6,000,000) of bonds to be issued, three million Five hundred thousand Dollars (G.$3,500,000) shall be issued in America and two million five hundred thousand (G.$2,500,000) thereof and any increase thereof shall be issued in the same or may be issued elsewhere. Any portion or series thereof and any increase thereof shall be issued in the same proportion.

[The ambiguity of this article is unexplainable unless the translator is endeavoring to avoid putting into English that the $2,500,000 is to be issued in Japan—Ed. F.E.R.]

ASSIGNMENT.

2.—The Corporation may, with the approval of the Chinese Government, transfer or delegate any part of its rights and powers hereunder, provided that the control of the Engineer Department, Accounts Department, and Contracting control shall not be transferred or delegated to any foreign national other than American.

ARTICLE X.

KIANGSU OPTION.

1.—In the event that in the future money is to be borrowed to improve the section of the Grand Canal from Tai-hang to Chinkiang in Kiangsu Province, application therefor will be first made to the American International Corporation.

ARTICLE XI.

COPIES: ENGLISH TEXT PREVAILS.

1.—This agreement shall be executed in quadruplicate in the Chinese and English language, each text being a correct translation of the other. In the event of any dispute arising at any time respecting the construction or meaning of this agreement, the English text shall prevail.

FILING OF COPIES.

2.—One copy of both Chinese and English texts of this agreement shall be delivered to and held by each of the following:—

(1) The Directorate General of Flood Relief and Conservancy.
(2) The Ministry of Foreign Affairs.
(3) The American Legation, Peking.
(4) The Corporation.

ARTICLE XII.

EFFECTIVE DATE.

1.—This agreement shall take effect on the date of transmission of a copy thereof by the Ministry of Foreign Affairs of the Government to the Legation of the United States of America at Peking.

In Witness Thereof the Government of the Republic of China and the American International Corporation have caused this instrument to be executed by the Director General of the Flood Relief and Conservancy and the Representative of the Corporation respectively at Peking. China, this . . . . day of . . . . A.D. 1917:

Republic of China.

By the Director-General of Flood Relief and Conservancy.

AMERICAN INTERNATIONAL CORPORATION.

By its duly authorized representative.

The Relation of Forests to Flood

[BY "AN ENGINEERING CORRESPONDENT".]

In the March issue Professor D. Y. Lin has very seriously taken to heart our comments on his article, "Does Forestry control Floods?" We hasten to assure him that his notion that our object was to "cleverly pick" out details from his article of about five thousand words is incorrect. Without any desire to carp we would point out that most of Professor Lin's matter was extracted from forestry literature. Few writers on forestry can be regarded as final authorities on hydrology, flood control, or the efficacy or otherwise of engineering works, however excellent they may be as experts in the art of developing and managing forests.

In order to clear up the atmosphere, we wish to express our opinion on the major issue "Can Forestry control Floods?" with a definite *negative.* Forestry can certainly ameliorate *some* floods, especially those in the immediate neighbourhood of the afforested areas. If carried out on a large scale, forestry can reduce (but not annihilate) erosion and silt production and thereby assist in the control of floods, but, speaking practically, a definite expenditure deliberately intended for flood control alone will as a rule give better results if spent on works than on afforestation.

Professor Lin says "no forest, no reservoirs, no dykes and no engineering works of any kind will ever be able to control floods if these floods are caused by exceptional meteorological conditions chief of which is excessive rainfall." This appears to us a ridiculous statement as applied to works. In many cases a sum spent on works of regulation,—much smaller than the sum sufficient to afforest the whole of a watershed (which afforestation would, as he says, *not* prevent exceptional floods) *would* prevent floods with an ample margin of safety as regard the excess of rainfall provided for as compared with the maximum known rainfall. Many lakes are made to act, in many countries, as storage reservoirs for several years' surplus rainfall.

The real point of this divergence of opinion lies in the fact that forests have a definite limit of storage which can be exceeded by an engineering work.

Again he speaks of the extraordinary beneficial effects in reduction of run-off. It should, however, be observed that the diminution of run-off may be much better effected by wet crop cultivation and that except in so far as the forests increase transpiration (which is not so very much) the only effect on total run-off is to transform the process from surface flow into seepage.

The certain effects of a forest may be described briefly as follows :—

(*a*) Continuous transpiration occurs, except in very humid weather, but to an extent not so greatly exceeding that from low crops or the evaporation from water areas.

(*b*) After dry weather there is a water storage on leaves and in the soil mat but not amounting to much more than a few feet of depth over the whole forest area.

(*c*) By the continuous displacement of this storage during wet weather, what would have been surface flow becomes seepage viâ springs into the rivers and is not so violent or erosive.

(*d*) When trees and soil are fully charged, the surface flow is just as if off bare rock except in so far as the tree trunks foliage and channel obstructions absorb kinetic energy.

Hence we cannot agree with Professor Lin's dogma that forests check run-off if he means that they do always and to the same degree. On the contrary, towards the end of a wet season it is doubtful if they have any effect whatever, whereas engineering works, if sufficiently extensive areas are available or can be made so, can and do provide sufficient reservoir accommodation to meet very extraordinary conditions.

Finally he says that "engineering works cannot have a permanent effect unless they are supplemented by a system of tree planting." This is not correct to anything like the extent suggested. There are in many parts of the world engineering works which do prevent floods without afforestation.

Again we would say that our object in criticizing is in no way to oppose afforestation which is a most important thing in China and will *help* in the flood problem. All we contend is that to suggest forestry as the certain, complete and only cure for floods may lead to disastrous disappointment.

Finally, we would remark that forestry is a matter which stands on its merits and will have the support of every engineer on account of such merits. These are, however, principally related to the question of timber and fuel supply, and no good can be done to the cause of afforestation by exaggerating the effect of forests on floods and climate, especially when immense areas are under consideration.

China's Internal Peace Conference

It will be recalled that the last formal session of the Internal Peace Conference before its deadlock was held on Friday, February 28, at which Mr. Tang Shao-yi, the Southern Chief Delegate, declared that unless Peking gave satisfaction to the Southern demands relating to the cessation of hostilities and the removal of Tuchun Chen Shu-fan of Shensi, within 48 hours, the peace negotiations would have to be suspended and he would communicate with the foreign Diplomatic Corps at Peking in regard to the matter. The next morning was an informal session, and, as usual, the two delegations met. Mr. Chu Chi-chien, the Northern Chief Delegate, announced that as he and his colleagues were not receiving the support of Peking they had tendered their resignation to the Government in a body. This brought the peace negotiations to a standstill.

On March 2 Mr. Tang Shao-yi, representing the Southern Delegation, sent a telegraphic appeal to Sir John Jordan, Doyen of the Diplomatic Body at Peking. In the telegram he stated that owing to the violation of the armistice agreed upon between the North and the South by Tuchun Chen Shu-fan, he could not continue the negotiations and concluded by requesting the Diplomatic Corps to use their good offices with the Peking Government to have the Military Governor of Shensi removed so that the Conference might resume its negotiations. On the same day a public statement was issued to the people giving reasons for the suspension of the Conference. Meanwhile the wires between Peking and Shanghai were busy carrying messages. As was to be expected, Peking refused to accept the resignation of the Northern Delegates, assuring them that the Government would do its best to have the armistice in Shensi enforced. On March 4 President Hsu Shih-chang issued a mandate reaffirming the five articles of the armistice promulgated on February 13 and ordering their strict enforcement on the part of the Northern Commanders. On the 5th a joint telegraphic order to the same effect was sent out by the Cabinet and the Ministry of War. Among other things it stated that in order to avoid misunderstanding on the part of the South the suppression of bandits should be suspended until the demarcation of the boundary on both sides had been arranged by Commissioner Chang Jui-chi. In this connection it may be remarked that if the mandate of the President and the order of the Cabinet to the Northern Commanders in Shansi had been issued one week before, when the Southern Delegation first requested such action, the present deadlock would have been avoided. As ill luck would have it, the proper measures came too late.

On receipt of the information that both the President and the Cabinet had again given orders for the strict and rigid enforcement of the armistice in Shensi, Mr. Chu Chi-chien, on behalf of the Northern Delegation, addressed a formal letter to Mr. Tang Shao-yi, the Southern Chief Delegate, on the 6th, stating that as all military operations, including those against the bandits had stopped, he requested that the Conference be resumed immediately. However, Mr. Tang was then seriously indisposed and was unable to reply. On the 7th Mr. Chu Chi-chien wired directly to Tuchun Chen Shu-fan, commander of the Northern Forces, and General Yu Yue-jen, Commander of the Southern Forces, requesting each one to telegraph to him full particulars concerning the cessation of hostilities in Shensi, so that the apprehensions of the Southern Delegates might be allayed and the negotiations resumed. On the 10th a reply from Tuchun Chen, dated the 8th, arrived, which confirmed the news that instructions for the cessation of all military operations had been given to the Northern troops, although the bandits were constantly provoking them, and further stated that both he and General Yu were holding direct communications so as to establish a mutual understanding. But nothing seemed to have been received from General Yu by the Northern delegates.

While efforts were being made to clear up the situation, a circular telegram from Premier Chien Nung-hsun dated the 6th, reviewing the circumstances leading up to the suspension of the Conference, for which Mr. Tang Shao-yi was held responsible, and blaming him for not having taken up legal and other more important questions at the Conference, complicated matters somewhat. On the 10th, with the exception of Mr. Tang Shao-yi, who had not then recovered from his illness, the Southern Delegates called on Mr. Chu Chi-chien and his colleagues and an informal conference ensued. They intimated that according to a letter from General Yu Yue-jen, dated March 2, fighting was still going on in Shensi and therefore there was no proof that hostilities had been brought to a close after that date. As long as Tuchun Chen Shu-fan was not removed they could not see how fighting in Shensi could cease; and as long as fighting continued in open violation of a solemn agreement they could not see how peace negotiations could be resumed. Two other points were brought forward for discussion: namely, the War Participation Loan and Army and the Legal question. As the discussions did not come to any result, the date of the resumption of the Conference was postponed.

Since then it has been reported that the two delegations have been making great efforts to resume the Conference so that the questions at issue between the North and South might be settled at an early date but the deadlock could not be removed because there was no conclusive evidence that fighting had entirely ceased in Shensi. The views held by Peking and the South regarding the dismissal of the Tuchun of Shensi, the War Participation Army, the War Participation Loan, etc., are also at great variance.

It seems that as long as it cannot be proven to the satisfaction of the South that fighting in Shensi has definitely ceased and will not recur the deadlock will continue. However, there is one ray of hope in the situation and that is that Demarcation Commissioner Chang Jiu-chi, a man trusted by both the North and the South, has arrived in Shensi and the resumption of the Conference largely depends on his report.

Another factor which has just emerged and which may exert a decisive influence in the situation is the Shanghai Chinese Commercial Federation. In a letter which this Federation addressed to the Northern Delegation, the following incisive statements appeared. "If the deadlock continues, civil war will be resumed, and this will be an act or gross injustice, since the people pay taxes to support the Government, and in return for such support, the Government deliberately proceeds to injure the people. . . . Why hate the merchants and people so much that the Government must seek their destruction? Why love one or two military men so much that it must protect them. No reason can be found. . . . It is our earnest prayer that the Conference be resumed within a week . . . . In case our prayers for peace are not heeded, we shall then be obliged to resort to measures of justice for our own protection." It is rumoured that if the deadlock cannot be lifted within the specified time the business men may be driven to make demonstrations, and adopt measures that will compel the North and South to respect their wishes.

The Much Debated Agreements Between China and Japan

Alleged Terms of the Military Pact

The various so-called secret agreements signed recently between China and Japan are now having a little airing. Before the Chinese delegates at the Paris Peace Conference forced the attention of the world to the matter of Japan's activities with regard to the military and naval situation in China, nothing accurate could be secured concerning the terms of the agreements. The result was that speculation ran rife and all manner of rumors were abroad as to the nature of the undertakings and their purport. The attitude of the Chinese delegates, particularly Dr. Wellington Koo and Mr. C. T. Wang, compelled publication of certain of the agreements and both the Japanese and Peking Governments ultimately agreed to release them. It is stated now that the important undertakings are contained in annexes which have not been published, but, be that as it may, the fact remains that it is on the published documents that the Peace Conference at Paris will act, if they act at all, and no claims based on unpublished documents will be maintained or recognised in the future.

Originally it was intended to publish all the Sino-Japanese secret agreements beginning on March 14, but just after the publication of the documents given below the Japanese Minister at Peking informed the Chinese Foreign Office that the Japanese Government wished the publication of further documents to be postponed on the ground that consultations between the Japanese and other quarters concerning the agreements had not been completed. Several members of the Chinese Diplomatic Commission also advocated discontinuance of publication on the ground that as none of the agreements had received the sanction of any Chinese Parliament and some had not even been discussed by a Cabinet, publication of them by the Government at this period would be tantamount to recognition of them. They also contended that instead of publishing the documents the Government should demand cancellation of them, seeing that they are objected to by the people. The documents translated for the Press concerning the mutual agreements between China and Japan relative to joint action against the enemy are :—Exchange of Notes relative to joint action against the Enemy—two documents; Exchange of Notes relative to withdrawal of armed forces —two documents; Military agreement for joint action against the enemy—in 12 Articles;—Naval agreement for joint action against the enemy—in nine Articles;—Explanatory Notes supplementing the Naval Agreement;—Explanatory Notes concerning important points in military agreement—in seven Articles;—Statement concerning the time of termination of joint military action against the enemy;—Statement concerning the time of termination of joint naval action against the enemy.

Exchange of Notes

The first Note is from the Chinese Minister to Japan to the Japanese Foreign Minister and is dated March 25. It draws attention to the " increasing strength of the enemy within the borders of Russia, the result of which cannot help but be a menace to the peace and tranquility of the entire Far East " and suggests joint military and naval action.

In reply, the Japanese Foreign Minister says that the Imperial Government is in complete accord with the views expressed and will be very glad to co-operate with the Chinese Government. In a further Note the Japanese Foreign Minister says :—"My Government desires to state that all Japanese military forces within the borders of China, connected with joint military action against the enemy, will be withdrawn completely from such territory upon the termination of military operations." To this China agreed.

Text of the Military Pact, signed on May 16, 1918

1.—China and Japan, realizing the fact that the gradual extension of enemy influence towards the East may jeopardize the peace of the two countries, consider it their mutual duty, as participants in the war, to take concerted action against the common enemy.

2.—As regards military co-operation, each country shall pay due respect to the prestige and interests of the other country, and both parties shall be considered to be on an equal footing.

3.—When the time comes to take action in accordance with this Agreement, the two countries shall instruct their military and civil officials and people to adopt a friendly attitude towards those of the other country in the military areas. The Chinese officials shall do their best to aid the Japanese troops in the said areas so that no obstacles shall arise to impede their movements, and the Japanese troops shall respect the sovereignty of China, and shall not be allowed to act in a manner contrary to the local customs and cause inconvenience to the people.

4.—The Japanese troops in Chinese territory shall be withdrawn as soon as military operations cease.

5.—Whenever troops have to be despatched outside Chinese territory, the two countries shall despatch them jointly whenever necessary.

6.—The military areas and other matters relating to the military operations shall be decided by the military authorities of the two countries whenever necessary, in accordance with the military strength of each country.

7.—In order to facilitate matters, in the course of the military co-operation the military authorities of the two countries shall observe the arrangements:—

(*a*) In regard to the making of all arrangements for carrying on military operations, both countries shall appoint deputies who shall arrange all matters regarding co-operation.

(*b*) In order to secure rapid transportation by land or water and rapid communication, both sides shall co-operate to this end.

(*c*) When occasion arises the two commanders-in-chief shall arrange all necessary military constructions such as military railways, telegraph and telephone lines. These shall all be removed at the conclusion of the military operations.

(*d*) Regarding the necessary military supplies and materials required for taking concerted action against the enemy, the two countries shall supply each other to such an extent as not to affect the supplying of ordinary demands.

(*e*) The two countries shall assist each other in carrying out sanitary measures for the troops in the military areas.

(*f*) With regard to the question of military experts for direct military operations, should the necessity arise for mutual assistance, if one country requests the assistance of such experts the other shall supply it.

(*g*) In the areas in which military operations are taking place intelligence agencies may be established, and the two countries shall exchange important military maps and military reports. The intelligence agencies of the two countries shall exchange information and render mutual assistance.

(*h*) All secret passwords shall be agreed upon mutually.

The questions as to which of the above agreements shall be considered first, and which shall be first entered upon shall be mutually arranged in a separate agreement, before the actual commencement of hostilities.

8.—When military transportation necessitates the use of the Chinese Eastern Railway, the provisions in the original Treaty regarding the management and protection of the said Railway shall be respected. The methods of transportation shall be decided upon at the time.

9.—Regarding the enforcement of the details in this agreement, it shall be decided upon by delegates appointed by the military authorities of the two countries.

10.—This Agreement and the supplementary articles therein shall not be published by the two Governments, but shall be considered as military secrets.

11.—This Agreement shall be signed and sealed by the military delegates of the two countries and recognized by the two Governments before it becomes operative. The time for commencing actual military operations shall be decided by the highest military organs of the two countries. This Agreement and all the details arising from this Agreement shall become null and void as soon as the military operations of China and Japan against the enemy countries of Germany and Austria come to an end.

12.—Two copies of this Agreement shall be written in the Chinese language, and two corresponding copies in the Japanese language, and each party shall keep one copy of the Agreement in each language.

Peking, May 16th of the 7th year of the Republic of China. May 16th of the 7th year of Taisho.

Military Delegates of the Chinese Republic.

Sealed by General Chin Yun-peng, Chief Delegate.

Delegates:—
,, Lieut.-Gen. Tung Huan-wen
,, ,, Cho Tung-feng
,, Major-Gen. Tien Shu-lien
,, ,, Liu Tse-yung
,, ,, Kiang Shou-chi
,, ,, Ting Chin
,, Liu Tsung-chi
,, Councillor of War
,, Participation Bureau
,, Major-Gen. Chang
,, Chi-yuan
,, Major Chen Hung-kwei
,, Major Chun Hua

Japanese Military Delegates:—
Major-Gen. Saito, Chief Delegate

Delegates:—
,, Major-Gen. Ugaki
,, Lieut. Colonel Honokura
,, Major Kwasaki
,, Captain Yamada

Text of the Naval Agreement between China and Japan, Signed May 19, 1918, translated from the Chinese

1.—(Same as Article 1 of Military Agreement).

2.—(Same as Article 2 of Military Agreement).

3.—When the time comes to take action in accordance with this Agreement the two countries shall instruct their naval officers and all officials and people to adopt a friendly attitude toward those of the other country in the military areas, and mutually assist each other with a view to overcoming the enemy.

4.—A separate agreement shall be drawn up regarding the field of activity and the duties of the participants when the time comes for taking action against the enemy.

5.—When the time comes for action the naval authorities of China and Japan shall co-operate with a view to taking efficient measures as follows:

(*a*) (Same as 7 (*a*) of the Military Agreement).

(*b*) (Same as 7 (*b*) of the Military Agreement).

(*c*) In all matters relating to shipbuilding and repairs and naval equipment and supplies, both countries shall mutually assist each other according to its power. This also applies to necessary military articles.

(*d*) (Same as Section (*f*) of Article 7 of Military Agreement).

(*e*) (Same as Section (*g*) of Article 7 of Military Agreement). Substitute "naval" for "military" wherever used).

(*f*) (Same as Section (*h*) of Article 7 of Military Agreement).

6.—(Same as Article 9 of Military Agreement, except that "naval" should be substituted for "military" wherever used).

7.—(Same as Article 10, with "naval" substituted for "military").

8.—(Same as Article 11, with "naval" substituted for "military").

9.—(Same as Article 12).

7th Year of the Chinese Republic, 5th month, 19th day;

7th Year of the Japanese Ta Cheng, 5th Month, 19th day.

Signed by:—
Chairman of Delegates (Chung Chiang) Shen Shou-k'un;

Delegates:—
(Shao Chiang) Wu Chen-nan.
(Shao Chiang) Ch'en En-tao;
(Chung Hsiao) Wu Kuang-tsung;

Chairman of Delegates:—
(Shao Chiang) Chi T'ien Tseng Tz'u Liang;

Delegates:—
(Ta Tso) I Chi Yuan Chun;
(Ta Tso) Hua Shan K'o Yeh.

Explanatory Notes Regarding the Naval Agreement for Mutual Action against the Enemy

I.—The navies of the two countries of China and Japan, looking toward the accomplishment of their mutual efforts in the war, in order mutually to carry out their purposes as outlined in Article 1, are agreed to render each other mutual assistance in the hope that these military efforts may be fully accomplished.

II.—Article 5 of the Agreement is explained as follows:—

The term "deputies" used in Clause (*a*) of Article 5 of the Naval Agreement is defined as naval attachés of each Legation, and naval officers stationed in other places, and others to be mutually appointed in case of necessity.

In Clause (*c*) of Article 3 the term "necessary supplies" shall be defined as "metallic articles." "Necessary military articles" shall be defined as "combustibles, provisions, ammunition—such things as are required in military operations." They shall be supplied by each country according to its power.

With reference to Clause (*e*) of Article 5 charts are to be supplied upon the request of either country.

In a place within which military operations are taking place, should it be found necessary by both sides to make surveys and soundings of any bays, such surveys and soundings shall be done by the naval authorities of the country in which the bays are situated.

(Signatures same as on Naval Agreement).

Supplement to Military Agreement Explanatory of Certain Important Points

The "delegates appointed by the military authorities of the two countries," provided for by Article 9 of the Military Agreement, have—with regard to the execution of Articles 6 and 7—agreed as follows:

1.—With regard to the military operations to be conducted by the military forces of China and Japan in the two Siberian Provinces of Trans Baikalia and Amur, the duty of these forces shall be to assist the Czecho-Slovak forces, and to drive out German and Austrian forces and such as may be rendering assistance to them.

With the purpose of obtaining a unification of military direction, and a maximum of harmony, the operations of the Chinese military forces in these Provinces shall be directed by Japanese commanders.

With the purpose of obtaining the giving of mutual assistance by the forces operating from Manchuli and from Trans Baikalia each to the other, the Chinese forces shall operate from Urga toward Trans Baikalia. If China desires the assistance of Japanese forces in this locality, Japanese forces may be sent to work in co-operation with the Chinese forces and be under Chinese commanders. China shall herself see to the protection of her borders to the west of Central Mongolia.

2.—The furnishing of arms and necessary military supplies, and no matter how urgent, shall be arranged mutually by the commanders at the front. The furnishing of all other supplies and of raw materials shall be arranged by the highest supply organizations of Tokio and Peking mutually.

3.—Should China desire the assistance of Japan in matters pertaining to sanitation, the Japanese military forces shall furnish such assistance so far as they are able. If such undertaking should assume large proportions later on, extending itself to the establishment of hospitals and convalescent stations, the Japanese forces shall accept Chinese assistance in these undertakings.

4.—Should the South Manchuria Railway be called upon to transport Chinese troops or supplies, China shall arrange herself for their transportation to Tairen, Newchwang or Mukden. Japan will assume the responsibility of their transportation from there to Changchun. Should China desire the assistance of Japanese forces to co-operate in operations from Urga to B——, Japan shall arrange for the transportation of her own troops and supplies as far as Taku, Chinwangtao or Mukden; from there on the responsibility of their transportation shall rest with China.

The transportation of troops over the Chinese Eastern Railway shall be in the hands of the organization having charge of the Railway. China and Japan shall establish a joint Bureau for the purpose of making proper arrangements with the Railway organization for the transportation of Chinese, Japanese and Czecho-Slovak forces over the Railway. Should other Allied countries later desire to carry on military operations in this region, they shall be permitted to participate in this Bureau.

5.—The proper authorities in Tokio and Peking shall arrange with regard to the joint sending of other officers to carry on these undertakings, in addition to the officers already arranged for or in progress of being arranged for, should circumstances arise making this necessary.

6.—Expenses connected with the furnishing of arms, other necessary military supplies, and raw materials, together with the expenses of military transportation and other necessary expenses, may be arranged for either at the time or after the termination of military operations.

7.—This agreement shall be in Chinese and Japanese, each in two copies. Each party shall retain one copy in each language as official texts.

Termination of the Military Defence Pact

The Government of China and the Government of Japan after negotiations between their respective highest military representatives have, according to Article 9 of the Sino-Japanese Joint Military Defence Pact and the provision regarding the termination of the state of war embodied in Section 2, Article 11, of the said pact, agreed upon the following terms:—

The termination of the state of war against the enemy countries, namely Germany and Austria, shall mean the time when both the Chinese and Japanese Governments shall have approved the Peace Treaty concluded with the enemy countries by the European Peace Conference and when both Chinese and Japanese troops stationed outside Chinese territories shall have been withdrawn simultaneously with the troops of the various Allied countries stationed in the same territories.

Two sets of this Pact each containing copies, one in Chinese and the other in the Japanese language, shall be provided, and sealed by both parties after comparison. Each party shall keep one set for reference.

(Signed) The 5th day of the 2nd month of the 8th year of the Chinese Republic.
The 5th day of the 2nd month of the 8th year of Taisho.
By the Military Representatives of the Chinese Republic. The Military Representatives of the Japanese Empire.

[A similar agreement with regard to the navy was signed on March 1, 1919.]

THE WAR PARTICIPATION LOAN CONTRACT

In accordance with the purpose of the joint military defence measures, mutually agreed upon by the Government of the Republic of China and the Imperial Government of Japan, the Government of the Republic of China (hereafter designated as A) hereby enters into agreement with the Imperial Japanese Bank of Chosen acting on behalf of the Imperial Japanese Chosen Banking Company, the Imperial Japanese Industrial Banking Company and the Taiwan Bank (hereafter designated as B) for a loan for the purpose of organizing and training a national army for joint defence operations and to provide the necessary funds for war participation. The loan contract is as follows:—

1.—The total amount of the loan shall be Yen 20,000,000 with treasury bills of the Republic of China deposited as security.

2.—The Government treasury bills issued as above shall be for one year with interest at 7 per cent. per annum and shall be issued on a discount basis. In addition, a commission of 1 per cent. shall be paid which shall be deducted from the total amount of the above-mentioned bills. Upon maturity the proper portion may jointly arrange for a reissue of the bills upon terms identical with the above.

3.—A shall deposit the whole amount of the loan in B at the time of receiving it. B shall pay interest on it annually at 7 per cent.

4.—When A finds it necessary to withdraw this deposit B shall hand the funds to the person designated to receive them in accordance with the procedure jointly decided upon.

5.—The cost of manufacturing the above treasury bills, the stamp taxes and miscellaneous expenses shall be borne by B.

6.—In the event that A should require a further loan for a similar purpose as this present loan B shall first be consulted in the matter.

This contract shall be drawn up in the Chinese and Japanese languages, two sets of each. A and B shall both retain one copy each. In case of doubt as to interpretation the Japanese text shall rule.

Seal of H. E. Chang Tsung-hsiang, Specially appointed Envoy of the Government of the Republic of China.

Seal of Mei-nung-pu-chun-chi Governor of the Imperial Japanese Bank of Chosen. 7th Year 9th Moon 28th day of the Government of the Republic of China, September 28, 1918.

Annex 1.

With reference to Article 4 of the Government of the Republic of China War Participation Loan Contract signed this day the funds thereof shall be paid to the Chief Official directly in charge of the Army Defence Bureau.

Seal of H. E. Chang Tsung-hsiang, etc.
Seal of Mei-nung-pu-chun-chi, etc.

Annex 2.

To
The Representatives of
The Imperial Japanese Bank of Chosen.
The Imperial Japanese Industrial Banking Company.
The Taiwan Bank.

Gentlemen,

It is hereby declared that the receipts from the new taxes resulting from reorganization measures by the Government of the Republic of China be regarded as a source of funds for the repayment of the Government of the Republic of China War Participation Loan, contract for which was signed on the 7th year 9th moon 28th day of the Government of the Republic of China.

Seal of H. E. Chang Tsung-hsiang, etc.
(signed) Mei-nung-pu-chun-chi, etc.

7th year 9th moon 28th day of the Government of the Republic of China, September 28, 1918.

Public Works in the Philippines.

The following sums or so much thereof as may be necessary, have been appropriated for the following public works :—

For the construction, improvement, and extension of telephone lines ...	Ps.50,000
For aid to local governments in the construction of a simple type of sanitary public market ...	25,000
For aid, especially in furnishing materials not produced in the locality, in the construction and improvement of public buildings, and for other purposes ...	30,000
For the maintenance and repair of such portions of the Manila North Road as have been, or may be, declared as first-class road, which traverse territory of the Mountain Province ...	120,000
For aid in supplying potable water, including the construction of public baths ...	100,000
For the construction, improvement, and maintenance of irrigation systems ...	40,000
For the construction, reconstruction, improvement, investigation, and survey of ports, wharves, piers, retaining walls, jetties, dams, and dredgings ...	300,000
For the construction, improvement, and maintenance of trails, roads, and bridges ...	600,000

Bureau of Education.

To increase the sum of Ps.300,000, appropriated in the year 1918 for the construction of normal schools and the purchase of grounds for the same ...		400,000
For Insular aid in the construction of buildings for central and barrio schools, as follows :—		
For central schools ...	Ps.200,000	
For barrio schools ...	200,000	400,000
For aid in the construction of high-school buildings ...		300,000
For the construction and improvement of buildings and irrigation systems, including the purchase of lands, for agricultural schools ...		200,000
For the purchase, survey, and registration of lands, and the construction, improvement and maintenance of buildings, for schools in the non-Christian and special provinces, including the Provinces of Batanes, Mindoro, and Palawan, and in all the provinces that may be organized during the year 1919 ...		50,000
For Insular aid in the completion of school buildings for which funds have been appropriated by previous acts, but the construction of which has not been commenced or completed, on account of the rise in the cost of materials ...		200,000

Bureau of Science.

For the construction of a lymph and serum laboratory (total cost of the project) ...	200,000

Bureau of Health.

For the construction of buildings in the Culion leper colony, as follows : Hospital wards, tenement houses, privy and laundry, secondary dam and connection thereof with the ice plant and electric plant, and a saw and planing mill (total cost of the project) ...	50,000
For the purchase, survey, and registration of lands, improvement of the grounds, and construction, improvement and maintenance of the buildings for hospital in the non-Christian and special provinces, including the Provinces of Batanes, Mindoro, and Palawan ; and in all the provinces that may be organized during the year 1919 ...	50,000

Bureau of Customs.

For the construction of a new pier at Manila (total cost of the project) ...		2,500,000
For the construction of an immigrant station, Manila (total cost of the project) ...		100,000
For the construction of piers, roads for passengers, and to complete the freight sheds, at Manila :		
Total cost of the project ...	Ps.825,000	
Amount authorized in previous years ...	Ps.425,000	
Amount authorized in 1919 ...		400,000

Bureau of Agriculture.

For the construction of buildings, sheds, fences, and coops ...	50,000

Bureau of Forestry.

For the installation of an electric light system for the rooms, dining room, kitchen, and building of the school of forestry at Los Banos (total cost of the project) ...	6,000
For the construction of a fire-proof vault in the building now occupied by the Bureau of Forestry in Manila (total cost of the project) ...	15,000
For the construction of three forestry stations in the provinces (total cost of the project) ...	5,000

Bureau of Posts.

For the construction, reconstruction, repair, and maintenance of telegraph and submarine cable lines and of radio stations, including the purchase of new submarine cable ...	640,000

Bureau of Coast and Geodetic Survey.

For the acquisition and installation of a wireless telegraph apparatus on the steamship *Romblon* ...	15,000

Bureau of Commerce and Industry.

For the maintenance, alteration, and repair of lighthouses, buoys, and beacons ...	30,000
For the construction of a draw bridge over the channel of Engineer Island (total cost of the project) ...	10,000
For the installation of an electric plant on Engineer Island (total cost of the project) ...	200,000

Bureau of Prisons.

For the reconstruction of buildings Nos. 2 and 5 in Bilibid (total cost of the project) ...	40,000
For the construction of a hospital building in the Iwahig penal colony, with electric installation (total cost of the project)	45,000

Bureau of Printing.

For the construction of a building for engines (total cost of the project) ...	65,000

Bureau of Constabulary.

For the alteration of the barracks and the construction of a sick ward, in Manila :		
Total cost of the project ...	Ps.100,000	
Amount authorized for the first time, 1919 ...		50,000

Bureau of Public Works.

Roads.—For the construction, improvement, and, where necessary, for the maintenance of roads and bridges under certain conditions ...	5,000,000

HARBOR IMPROVEMENTS.—For the construction, repair, reconstruction, improvement, investigation, and survey of ports, wharves, piers, jetties, dams, and for dredgings, in the different districts of the Archipelago, including the purchase of necessary equipment, and the continuation of wharves and other improvements projected by former acts	2,000,000
Provided, That subject to the approval of the Secretary of Commerce and Communications and with such security as the same may require, material derived from dredging may be used for filling in private property at the request of any landowner, upon the condition that the cost thereof shall be paid by the owner of the land in annual payments not to extend over more than five years.	
ARTESIAN WELLS.—For the drilling of artesian wells, including the purchase of necessary equipment, and for the study and construction of Insular, provincial, and municipal systems of waterworks, and for the investigation, construction, reconstruction, and extension of baths and other sanitary improvements for the development and exploitation of properly tested and approved mineral springs in places of public resort, whenever the provinces and municipalities concerned shall adopt resolutions for the appropriation of funds covering the cost of one-third part of the work	780,000
IRRIGATION.—For the investigation, survey, construction, reconstruction, and improvement of irrigation systems, including the purchase of the necessary land and equipment	500,000
BUILDINGS.—For the construction of the following buildings, including suitable fixtures and furniture: (1) for the use of the Legislature, (2) for offices and rooms in Malacañang Palace, (3) for a Custom House, (4) for a Post Office, (5) for an Arts and Trades School, (6) for offices of the Supreme Court, (7) for new pavilions, dormitories, and other additional buildings for the General Hospital, (8) for a residence and school for the deaf and the blind, and (9) other Insular buildings of lesser importance not exceeding in each case twenty-five thousand pesos, and for the acquisition and improvement of the necessary land	2,500,000
For the maintenance, alteration, improvement, and repair of public buildings, including adjacent lands belonging to the same	400,000
INVESTIGATIONS.—For expenses of investigation of applications for irrigation and water supply systems, and for the study of river control projects, submitted to the Irrigation Council ...	25,000
For the investigations and surveys required for projects proposed, when such investigations and surveys have been approved by the Department Secretaries acting jointly ...	50,000

UNIVERSITY OF THE PHILIPPINES

For the construction of a laboratory for the College of Liberal Arts (total cost of the project)	40,000
For the construction of a laboratory of entomology and plant pathology, College of Agriculture (total cost of the project)	40,000
For the construction of a workshop building, College of Engineering (total cost of the project)	40,000
For the construction of a laboratory for the College of Agriculture (total cost of the project)	40,000
Total of appropriations made by this section ...	...Ps.18,731,000

The Peanut as a Food

The peanut or groundnut, as it is called, is so largely produced in China, and is also generally grown and widely distributed in China and the Philippines that some facts regarding its food value written by the Bureau of Science, of Manila, are worth reproducing for general information. The Bureau points out that at the present period of food conservation the peanut might well be used economically as an addition to our list of foods. Chemical analysis shows it to have a very high nutritive value. A kilogram of whole peanuts, as used in confections, peanut butter, etc., contains nearly one-half kilogram of fat, one-fourth kilogram of protein, both the oil (or fat) and the protein being of a very high grade and readily digestible. One kilogram of peanuts furnishes about 5,950 calories, while one kilogram of beefsteak yields less than one-third as much, and one kilogram of eggs less than one-fifth of that amount. It has been found that if the peanuts are pressed, the flour prepared from the pressed cake makes a delicious wheat substitute and the oil a sweet, wholesome table and cooking oil. By pressing out part of the fat for frying purposes and mixing the remaining cake with cooked sweet potatoes an ideal paste food can be obtained which possesses all the necessary constituents for the nourishment of the body. Chemical analysis of peanuts shows them to contain:

Water	6.3 per cent.
Ash	3.2
Crude protein	28.8
Digestible protein	23.7
Raw fiber	13.9
Nitrogen free extract...	7.2
Digestible carbohydrate	11.3
Raw fat	41.2
Digestible fat	39.1

These figures show that the peanut is a mixture of all classes of foods which are required by the human economy in its metabolism.

It is estimated that 12,000,000 kilograms of peanut oil were produced in the United States in 1916. The peanut cake is very valuable as a food for fattening hogs and also as a fertilizer. Chinese gardeners make extensive use of it for the latter purpose. The average yield per hectare (2.471 acres) in the United States is about 30 hectoliters (84 bushels) of peanuts in the shell. A good yield is 53 hectoliters (150 bushels) of the nuts with two and one-half to four tons of hay. Yields of 140 hectoliters (400 bushels) of nuts with five tons of hay per hectare are on record. In 1917 the crop in the United States was approximately 21,000,000 hectoliters (60,000,000 bushels) of peanuts in the shell which would yield one-third of that amount of shelled nuts. United States statistics show that one hectare of land that will produce 35 hectoliters (100 bushels) of peanuts will yield 175 kilograms of digestible protein in the form of wheat, 170 kilograms in the form of oats, 220 kilograms in the form of peanuts. It will yield 27 kilograms of fat in the wheat, 70 in the oats, about 340 in the peanut. As fat and protein are the most valuable and most expensive foods, it is apparent that the peanut should form one of the most important food crops of the Philippines. Throughout the present campaign for the conservation of food the Bureau of Science has urged the more extensive use of this highly nutritious substitute for other foods. Among the various foods the peanut should take the lead, not only as a confection and condiment but as an actual part of the daily bulk of food consumed. It has been found that for most people no vegetable product contains a more easily digested or more nutrient mixture than does the peanut kernel. During recent years great quantities of shelled peanuts have been converted into peanut butter, which has become very popular for use in thick soups and gravies, and for sandwiches. The production of this food article should be extended. In the Philippines it might well be manufactured in large quantities and mixed with camote paste, rice, or other carbohydrates of a general food nature, and retailed from the market stores at a normal cost. Shelled peanuts are roasted at a temperature not to exceed 160°C (320°F). The peanuts can then be salted and eaten as an emergency ration, or can be finely ground and salted, and used as peanut butter. A number of recipes are furnished by the United States Department of Agriculture (Yearbook of the U. S. Department of Agriculture, 1917, pages 292-5).

A pilgrim from Mongolia recently passed through Tachienlu, in far Western Szechuan, on his way to Lhasa, prostrating himself along the whole way, with a view to acquiring merit, to procure the restoration of his mother's health. The correspondent of the "North-China Daily News" writes that the pilgrim claims to have been on the road several years, and will probably require several more before he reaches Lhasa. His rate of progress is 20 li a day on level roads, and 10 li in mountain country. When travelling a large leathern apron protects his body, and wooden shields are used to cover his hands. The method he employs is to stretch his body full length upon the ground, extend his hands forward as far as they will go, mark the place his outstretched hands have reached, rise and step forward two or three paces to this spot, and then prostrate himself again, and so on in the same manner day by day. He engages a man to carry his pack, and solicits alms in the towns through which he passes. Whilst pilgrims of this class are not common in Tachienlu, his passage through the town did not attract any special attention from the townspeople.

ENGINEERING, FINANCIAL, AND INDUSTRIAL NEWS

RAILWAYS

Chefoo-Weihsien Railway Project. — The Chinese Chamber of Commerce at Chefoo recently sent the following telegram to the Peace Plenipotentiaries for China in Paris:

> "As the realization of a Chefoo Railway in Shantung Province is commercially and politically a vital and important factor, affecting alike the Sovereign Rights of China and the proper interests of those having trade relations with China, your consideration is respectfully solicited for the presentation of the question at the Peace Conference. For many years, particularly since 1908, there has been continuous commercial agitation for the Chefoo Railway, but owing to the conditions imposed by Germany on China under the Kiaochow Conventions (conditions now claimed by Japan as successor) with regard to Finance and Railway construction in Shantung, our Government, while repeatedly expressing genuine appreciation of the merits of such an enterprise, have been restrained from either building the Railway or granting permission for construction as a purely private commercial undertaking. It is mandatory that China's freedom of action in the development of Shantung should be guaranteed. Under such a regime, not only would the Open Port of Chefoo be saved from commercial extinction, but the Sovereign Rights of China would be better assured."

Shanghai Tramways.—The effective receipts of the Shanghai Tramways in February amounted to Mex $105,677.97 as against $103,457.95 in February of last year, with 6,248,940 passengers carried in February 1919 as against 5,911,549 in February, 1918. Recent weekly figures were as follows:

Week Ending:	Effective Receipts:	Passengers Carried:
March 5th	$26,330.18	1,588,498
March 12th	28,743.41	1,748,595
March 19th	28.591.70	1,734,488
March 26th	27,549.77	1,666,778

Congestion of Cargoes on S.M.R. Lines.—According to an investigation made on February 18th, the congestion of cargoes at the S. M. R. Co. Manchuria Line points north of Liaoyang is 629,051 tons, of which 612,866 tons are southbound and 16,185 tons are northbound. At points south of Liaoyang there are about 100,000 tons of cargo awaiting transportation, most of which are at Yingkou. About 260 cars are now being supplied daily for north of Moukden. The cargo at the northern points is as under:—

	(not including coal)
Fushun	30,450 tons
Hsintaitzu	16,500 ,,
Kouchiatien	10,801 ,,
Tiehling	19,216 ,,
Kungchuling ...	64,780 ,,
Kaiyuan	93,107 ,,
Fanchiatun	39,150 ,,
Changchun	259,300 ,,

Proposed Canton-Macao Railway. — The Canton-Macao Railway Company has been provisionally registered. A meeting of stockholders is to follow soon.

Japanese Railways Building Locomotives.—Twelve locomotives, bigger than any yet in use in Japan, will shortly be built by the Imperial Railways in the Hamamatsu shops. The Imperial Railway Board is also preparing to turn out a number of 12-ton cars from its own shops, as private car builders have fallen behind in their deliveries of cars by 1,000 out of an order for 2,500 cars.

Subway for Tokyo.—A group of Toyko businessmen have applied for permission to construct a subway in Tokyo with a capital of Y.200,000,000. The elevated lines in Tokyo are being extended as well. These measures are required by the congestion of the street railway system.

MINING

New Manchurian Colliery.—The Shihpeiling Colliery, near Changchun, with a daily output of 150 to 200 tons, is being put ready for operation by the South Manchuria Mining Co.

Kailan Mining Administration. — Recent weekly records of production and sales of the Administration's mines have been as follows:

Week Ending:	Output: tons	Sales: tons
March 1st	68,527	63,442
March 8th	66,532	68,266
March 15th	74,425	60,089

Seoul Mining Company.—During February the Tulmichung mill worked 11,800 tons of ore, yielding a gross recovery of Yen 146,918.44. Due to the severity of the weather and the shortage of fuel supply, the Suan mill was temporarily closed during February, but was restarted from March 1st.

Japanese Mineral Outputs.—A Japanese Government estimate puts the output of leading minerals in 1918 as follows: Gold 1,961,203 *momme;* silver 49,526,314 *momme;* copper 135,056.620 *kin;* iron 81,558 tons; coal 23,741,294 tons; petroleum 2,084,582 *koku;* sulphur 60,004 tons. Gold, iron and coal show slight increases; the other items show decreases. The *momme* is the equivalent of 0.13228 ounce avoirdupois; the *kin* is the equivalent of 160 *momme* or 1.32277-lb. avoirdupois; and the *koku* is the equivalent of 4.96005 Imp. bushels.

Japanese Mining Concessions.—The applications for new mining concessions filed with the Japanese Government in 1918 totalled 29,388. Of these 16,708 were for metal and 10,006 for coal mines.

Rich Coal Discoveries in Manchuria.—It is reported that the coal discovered in Sinchiu is far superior in quality to that of the mines at Fushun and Pengchi. A joint company of Japanese and Chinese, named the San Hsin Company, is reported to have been organized with a capital of Yen 3,000,000 for the working of the mines.

Hokkaido Colliery Dividend.—The Hokkaido Colliery and Steamship Company proposes to pay, on its workings in the last term, a dividend of 18 per cent. on both preference and ordinary shares, which will account for some Yen 1,300,000 of a total profit of Yen 4,189,377.

INDUSTRIES

Flour Mill in Chinese Interior.—The Tien Feng Flour Mill, with a capacity of 60,000 pounds daily, was put into operation at Kaifeng, in Honan Province, in March. The machinery, which is of the latest American pattern and which was supplied by a Shanghai firm, cost over $50,000.

New Cotton Mill at Tsingtao.—A new and up-to-date cotton spinning mill of 15,000 spindles will be built for the Wa Shing Cotton Spinning and Weaving Co. of Tsingtao. Gaston, Williams & Wigmore will supply the machinery, which will be of American make.

Modern Laundry for Shanghai.—A company is being floated in Shanghai for the purpose of operating a modern steam laundry with the most up to date machinery. Half the capital of Tls. 250.000 has been subscribed by the directors, and the remainder is offered to the public in shares of Tls. 10.

Tsingtao A Beef Centre.—The exportation of beef from Tsingtao is steadily increasing. From 1,894 tons in 1915 the export grew to 8,837 tons in 1918, distributed as follows: Manila, 3,704 tons; Japan, 2,660 tons; Vladivostok, 1,401 tons; Shanghai and Dairen, 200 tons; others, 872 tons. The Quartermaster Department at Manila is a heavy purchaser.

New Osaka Textile Works.—A new textile factory with a capital of Yen 500,000 is being established at Osaka for the manufacture of calico or shirting.

Big Profit for Spinning Company.—The Kanegafuchi Spinning Company made a profit on its operations in the past half-year amounting to considerably more than half its paid-up capital, and has paid a dividend of 70 per cent. per annum in addition to placing handsome sums to various accounts for the benefit of employes.

Syndicate for Nitrate Fixation.—It is reported that the Mitsui, Mitsubishi, Sumitomo and Sankyo groups have secured from the

United States the patent rights for the process of deriving nitrogen from the air for the manufacture of nitric acid and explosives and will establish a Yen 20,000,000 company for the purpose.

Japanese Woollen Works for China.—The Manchuria-Mongolia Woollen Manufacturing Co. has been established with a capital of Yen 10,000,000, to which the Japanese Government will contribute Yen 150,000 as a grant annually for four years, and will establish a woollen yarn factory and woollen weaving factory at Moukden, with a wool-cleaning and wool-combing factory at Tientsin.

Yangtszepoo Cotton Mill Dividend.—The Yangtszepoo Cotton Mill, Shanghai, from 1918 profits amounting to Tls. 401,542.01 plus an amount brought forward, or Tls. 403,494.62 total, has declared a dividend of 16 per cent. on its ordinary shares. In addition the usual sums have been written off.

Electric Furnaces for New Steel Plant.—Suzuki & Co. have in hand a scheme for a new ironworks at Oita, Kyushu, covering an area of 3½ acres, which will employ electric furnaces, the first in Japan, with hydraulically developed electricity.

New Industries.—It is reported that a paper mill is in course of erection at Kweiyang, the capital of Kweichow province. The machinery is of Japanese make.

An electric light plant is in course of erection at Pochow, (Anhwei province) with a capacity of 3,000 lamps. It is expected to be completed by the autumn of this year.

Two small albumen factories are reported to be in course of establishment at Pochow, (Anhwei province) on the north of the river.

FINANCIAL

International Banking Corporation Reorganization.—Commenting on the recent reorganization of the International Banking Corporation the London "Board of Trade Journal" says: "The application under Government sanction of National City Bank power to the International Banking Corporation machine is expected to produce increasing benefits for American business. It marks a step forward in the finance of American import and export trade with China and other Eastern countries."

Tax Collecting in China.—The Wing Ho hong has purchased the right to collect the tax from all butchers within twelve miles of Canton, paying Mex. $251,000 for the privilege.

Bank of Taiwan.—The Bank of Taiwan (Formosa) has paid a dividend of 10 per cent. on its workings in the past year. The dividend accounts for Y.1,186,000 of the credit balance of Y.2,336,334, of which Y.1,873,968 was earned in the past term. A balance of Y.575,334 is to be carried over.

Reduced Wolfram Tax.—The government of Kwangtung Province has reduced the mining tax on wolfram to $2.50 per picul. The selling price of wolfram is now around $32 per picul.

International Bank Declares Dividend.—The Shanghai Branch of the International Banking Corporation has received a telegram from its head office in New York advising that a dividend of G.$3 per share has been declared payable April 1, and that G.$445,245 has been added to undivided profits.

Philippine Bank in Shanghai.—The Philippine National Bank has established an agency in Shanghai, with offices in the McBain Building on the ground floor. The Bank also has about twelve branches in the Philippines, and its total assets at the end of 1918 stood at 248,000,000 pesos.

Bank of Japan Dividend.—The Bank of Japan declared its usual dividend of 12 per cent. on 1918 workings, accounting for Y.2,250,000 of its profit balance of Y.4,999,194. The amount brought forward to the next term was Y.2,044,194.

Influenza and Life Insurance.—The Japanese life insurance companies have paid Y.7,000,000 on policies in the past seven months due to deaths from influenza. This is over one-thousandth of the total policies in force.

SHIPBUILDING

New Shipyard at Shanghai.—A new shipbuilding company, the Sung Fuh Yue, has secured some 15 acres of land about three miles above the Shanghai Arsenal on which a shipyard will be built for the construction of large vessels. Engines and boilers will be made at the works. It is reported that the yard has the backing of Japanese interests.

The Japanese Merchant Fleet.—2,641 steamers aggregating 2,310,959 tons, and 12,431 sailing ships of 357,556 tons were registered in Japan at the end of December. Of the steamers 616, totalling 1,859,349 tons, were over 1,000 tons.

Japanese Launchings.—Vessels launched at Japanese shipyards between January 1 and February 20 totalled 67,382 tons. In 1917 145 slips were in use, but the slump in shipbuilding has been responsible for the closing of 40 of these. It is estimated that 700,000 tons will be built in 1919, of which about 230,000 tons are to be supplied to the United States under the agreement for the exchange of new vessels for shipbuilding materials. Of the remainder 400,000 tons are being built by shipyards on their own account and 70,000 tons are being built on orders from shipping companies. Construction within the past five years in Japan has totalled only 1,100,000 tons.

Japanese Dockyard Company Enters Blagovestchensk.—The Kawasaki Dockyard Co. intends to purchase a Russian shipbuilding yard at Blagovestchensk which was seized by the Bolsheviks but which has lain idle since the Bolshevik retreat. The yard has construeted every vessel now on the Sungari.

Cruiser Makes 33 Knots.—The Japanese light cruiser Tatsuta, 3,500 tons, developed a speed of 33 knots on her official speed trials, making her the fastest ship in the navy.

SHIPPING

Japanese Shipyard Builds Motor Cars.—One of the many Japanese shipyards to become affected by the slump in shipbuilding in Japan has decided to experiment with the manufacture of motor cars in its Yokohama plant.

American-Japanese Shipping Combine.—A preliminary meeting has been held at the Kobe Chamber of Commerce for the organization of the American-Japanese Shipping Company, which proposes a joint capitalization of American and Japanese shipowners of 200 million yen. The plan is said to have been evolved by shipowners other than the three great steamship companies of Japan to tide them over the present crisis and to put them on a permanent foundation for participation in shipping activities of the world. American interests would supply half the capital.

Dollar Line's Big Fleet.—The Robert Dollar Company is reported to have made plans for the construction of ten large freight and passenger steamers for the San Francisco-Orient run.

Decreased Pacific Freights.—The Trans-Pacific Tariff Bureau on February 17 announced the new trans-Pacific freight rate at G.$20 per ton of 40 cubic feet (or 2,000-lb. at ship's option) on cargo not otherwise specified. The exceptions are few in number.

Launching at Hongkong.—The Taikoo Dockyard launched on March 4 the str. "Laertes" for Messrs. Alfred Holt & Co. The vessel, which is 441-ft. 6-in. overall length, 52-ft. 4-in. breadth, and 33-ft. in depth, has a gross tonnage of 5,800 and a deadweight carrying capacity of about 8,000 tons. Triple expansion, surface-condensing engines with two large double-ended and one single-ended auxiliary boiler designed for a working pressure of 200-lbs. will drive the ship at a speed of 13 knots.

New Passenger Vessels for Pacific.—The Nippon Yusen Kaisha contemplates the building of several vessels of 20,000 tons each with a speed of 18 knots for the Pacific trade.

Kawasaki Dockyard Enters Shipping Field.—Mention was made in an earlier issue of the intention of the Kawasaki Dockyard to enter the shipping business with a great fleet. It develops that the new concern is to be known as the Fukuyo Kisen Kabushiki Kaisha, and will build 33 new steamers this year and 30 more next year. With this fleet, comprising a total of 600,000 tons, service will be given to Bombay and to North America.

Japanese Charter Rates.—A new 5,000 ton steamer has been chartered at Yen 13 for a round-the-world voyage. Owners are quoting Yen 12 and Yen 13 for similar charters, while prospective charterers believe that Yen 10 is sufficient. The coasting rate is quoted at Yen 5 and less, and shippers expect a further decline.

Activity in Dairen Harbor.—On February 13 there were 44 steamers in Dairen harbor, the largest fleet ever witnessed there since the Japanese took over the management of the Dairen wharves. The "Andes," 7,772 tons, of the Osaka Shosen Kaisha, which brought American locomotives, and the Nippon Yusen Kaisha's "Sanseki Maru," were the largest. Every berth along the quays was occupied and there were besides a good number of ships in the roads.

Dai Nippon Brewery Profits.—From net earnings of Yen 2,107,063 in 1918 plus Yen 532,364 brought over, the Dai Nippon Beer Brewery Company has declared a dividend of 30 per cent., accounting for Yen 1,320,000.

Japanese Ships Laid Up.—While there are many Japanese wooden ships lying idle at Japan ports, it has only been recently that low freight and charterage rates have brought about idleness of steel vessels. The Kawasaki Dockyard has four 9,000-ton steel steamers lying at anchor.

Banker Line Vessel for West River Trade.—The Banker Line has constructed a vessel, the str. "Kong Ning," of 180-ft. length and 32-ft. beam, for the West River trade, which has been described as an oceangoing liner in miniature Her hull is of composite construction. Scandia crude oil internal combustion engines of 480 h. p. manufactured in San-Francisco drive the boat at a speed of 10½ knots. Independent engines are fittted for generating electricity for light and a windlass. The vessel has a deadweight carrying capacity of 800 tons with a draught of eight feet. The passenger accommodation is 995, including 24 cabin passengers, 263 upper deck passengers, 660 main deck passengers, and a crew of 48. Until conditions on the West River become more settled the vessel will be used on the run between Hongkong and Canton.

Activity in West River.—Chinese merchants at Wuchow are displaying great activity in enlarging the shipping traffic on the West River. In addition to the increased number of motor boats owned by Wuchow firms, several new motor launches and one or two big steamers owned by newly formed companies are to be put in the trade this Spring.

New Ship for Pacific Steamship Co.—The new 7,500-ton steel cargo steamer "Yukon," which is now crossing the Pacific under charter to the Quartermaster Department of the U. S. Army, will be taken over by the Pacific Steamship Co. for the Far Eastern trade, as soon as her cargo is discharged at Vladivostok.

CONSTRUCTION

Construction at Kobe.--Five handsome office buildings are under construction at Kobe. They will become the headquarters of the Katsuda Steamship Company, the Uchida Steamship Company, the Mitsui Bussan Kaisha, the Yokohama Specie Bank, and the Kawasaki Bank.

Canton to Build Wide Roads.—The Canton Municipality has decided to construct 61,770 feet of roads 80 feet in width, except one from the West Bund Gate which will be 100 feet wide.

Railless Trams for Canton.—The Canton Municipality is asking for bids on a railless tramway system which will be constructed after the removal of the ancient city walls, now in process of destruction.

MISCELLANEOUS

Chinese Enterprises in America.—A wireless from America announces that the formation of the first exclusively Chinese commercial organization in the United States and a new Chinese steamship line, for which the merchants of San Francisco subscribed $3,000,000, were announced at the dedication of the Chinese Industrial and Commercial Association Building in the Chinese quarter of Chicago to-day.

Min River Engineer.—Mr. J. R. West, of Peiyang University, Tientsin, has been appointed Engineer-in-Chief of the Min River Conservancy, at Foochow.

New Sino-American Co.—According to the *Shunpao* the American Pacific Commercial Co., of San Francisco, has written the Chinese Chamber of Commerce stating that it intends to "establish companies and factories in China with the object of extending its trade," the capital to be from "$75,000,000 to $100,000,000 gold, half of which is to be subscribed by Chinese." The Company will send representatives to China to make investigations and open a branch at Shanghai.

Japanese Dockyard for Shanghai. — The *Shunpao* announces that Japanese interests have purchased one hundred mow (a little over 16 acres) of land on the Pootung side of the river opposite Shanghai, for the establishment of dock and engineering works. The same paper also says the Shanghai Dock and Engineering Works has purchased land at Pootung to build another dock.

Silk Merchant's Loan.—The *Shunpao* reports that the Ministry of Finance has granted an extension of time to enable the Shanghai silk merchants to arrange for repayment of a loan of Tls. 1,000,000 made to the merchants last year on the guarantee of the Chinese Chamber of Commerce. The loan was made by the Bank of Communications and the Bank of China.

Timber for Tea Chests.—The Ministry of Commerce and Agriculture has instructed the Industrial Bureaux in tea-growing districts to have willow and maple trees planted in order to provide timber for tea chests.

New Cigarette Factory at Moukden.—The East Asia Tobacco Co., a Japanese concern, is reported to have decided upon the construction of a new cigarette factory at Moukden at a cost of about Y.600,000.

Iloilo Sugar Crop.—The close of the 1917-18 sugar season found about 48,000 tons of sugar on hand at Iloilo while about 116,000 tons had been exported, some 45,000 tons having been carried over from the 1916-17 season. The 1918-19 crop is estimated at about 120,000 long tons, of which one-quarter will be centrifugals, largely from the San Carlos factories. Of the preceding crop, about 48,000 tons went to China while less than half that quantity, or about 23,000 tons, went to the United States; about 34,000 tons went to the United Kingdom, and about 11,000 tons to the coastwise ports in the Far East.

American Flag Leading Philippines Trade.—The American flag stood first in value of trade carried to and from the Philippines in 1918 with 106 million pesos in exports and 56 millions in imports, or a total of 162 millions. The British flag was next in order, with 48 millions in imports and 73 millions in exports, and the Japanese third, with imports of 58 millions and exports of 49 millions. The growing importance of the American merchant marine in American commerce is exemplified by the 1918 figures in contrast with the situation in 1917, when the British flag was first, the Japanese second, and the American third. The value of the American trade with the Philippines in 1918 was 296 million pesos, of which 117 millions represents imports, and 179 millions exports. The American proportion is something over 60 per cent. of the total of 468,563,000 pesos.

Tsingtao Trade Expanding.—Japanese statistics reveal that the trade through Tsingtao has steadily increased since the occupation of the port by Japan in 1915. In that year the imports and exports totalled 358,556 tons, while 1918 exports were 611,760 and imports 355,278, or a total of 967,039 tons.

Coolie Immigration in Manchuria.—The movement of coolies from Shantung Province into Manchuria, in search of employment, is under way. In the first ten days of March, 7,754 coolies of those disembarked at Dairen left for the North by rail. This coolie movement is northward in the spring and homeward in the autumn, and is an annual occurrence. The number who left Dairen last year in March was 8,451 and in April 18,684. Most of the coolies leave from Chefoo, while others sail from Tsingtao, Lungkou and other places. They number about 1,500 a day, and every ship coming from a Shantung port carries a full list of deck passengers.

Victory Monument at Peking.—The material salvaged from the destruction of the memorial arch in Peking known as the Ketteler monument has been removed to Central Park, where it will be used in building another arch to celebrate the victory of the Allies.

Foreign Tutor for Ex-Emperor.—The boy Ex-Emperor of China will have a foreign tutor, Mr. R. F. Johnston, an Englishman, having been engaged for the position for a term of three years at a salary reported as $600 per month with an allowance of $100 per month. The boy's staff of three Chinese tutors will be retained, his English lessons occupying only two hours a day. Mr. Johnston, who is the author of several books on China, is a sinologue of considerable repute, a Master of Arts of Oxford University and a Fellow of the Royal Geographical Society.

Airplane Route in Philippines.—The Aero Club of the Philippines has announced the completion of plans for a regular airplane line between Manila and Iloilo with at least four of the largest Government machines for carrying mail and passengers. An instructor is now *en route* from the United States to train the fliers.

Tobacco Monopoly in Japan.—In 1918 the production of cigarettes with mouthpieces by the Japanese Monopoly Bureau totalled 10,250 millions valued at 56 million yen, cigarettes without monthpieces to 3,020 millions valued at 18 million yen, and leaf tobacco valued at 63 million yen. These figures compared with the preceding year show respectively an increase by 12, 40 and 5 per cent. Of the cigarettes 250 million were exported to China and 470 millions to Korea and Formosa, the rest being consumed in Japan. The daily consumption of tobacco in Japan, including the foreign goods, averages Y.380,000 in value.

Cart Traffic in Manchuria.—Due to the congestion of the Chinese Eastern Railway, cartage traffic between Changchun and Harbin has recently become a regular means of transportation. The distance of 150 miles can be negotiated by a cart with a capacity of 3,000 pounds, hauled by seven to nine ponies, in one week. Before the construction of the railways, carts were widely used in Manchuria for the transportation of goods.

Japanese Fertilizer Purchases.—Imports of fertilizers into Japan in 1918 totalled Yen 114,500,000, comparing with 78,100,000 in the preceeding year. Of the 1919 total beancake, with is produced mainly in Manchuria, accounts for Y.85,800,000 and Chilean nitrate for Y.11,200,000.